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Native Americans and the conservation of flora and fauna in Brazil¹

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INTRODUCTION

The success of conservationist measures to protect the flora and fauna of a given region inevitably rests upon the role of the local human populations in respecting and cooperating with the decreed measures. This respect comes not only from education, but also from the provision for adequate subsistence independent of the wild flora and fauna. In addition to implicit consent, there must be enforceable sanctions against abuse of the laws, and no doubt about the legitimacy of the control of a given area, or over the exploitation of a given species or natural resource. For a number of reasons, which have nothing to do with the conservationist legislation presently adopted in Brazil, such tacit consent and unchallenged legitimacy are not everywhere present. One problem is the remaining dependency of the local populations on the forests for their basic protein supplies; another is the conflict between conservation laws and legislation which protects the surviving native American, or Indian, societies.² The Indians, specifically, are exempt from all laws restricting the hunting and fishing of endangered species.

This paper examines some of the difficulties which arise when native American reserves and forest reserves, ecological stations, or national parks are juxtaposed, or when a single area is expected to serve for both ends. Three cases are examined here: the conflict between the Pataxó Indians and the Brazilian Institute for Forest Development (IBDF) with respect to the Mount Pachoal National Park in the State of Bahia; the multiple use of the Ilha de Bananal, site of the Araguaia National Park in the State of Goiás; and the proposals for an Indian Park in the northern part of the Territory of

Roraima for the Yanoama Indians, who reside in part of the Nublina National Park. The most important conclusions to be drawn from the situations described are: (1) that human populations adapt rapidly to new technology and to the pressures of the market economy, and change their relationship to their ecosystems far more rapidly and drastically than the animal populations; (2) separate provision must be made to guarantee the use-rights of native American areas, as guaranteed by existing national law; (3) the native Americans should be provided with technical assistance and advice to prevent the destruction of their natural resources; (4) areas designated for conservation and protection should be very clearly distinguished from Indian areas in their establishment, their maintenance, and their politics; and finally (5) the non-Indian regional population must be provided with substitute resources and the areas must be adequately policed.

The Office of Environmental Affairs of the World Bank has developed a definition of what they call 'tribal groups' which attempts to distinguish such groups from 'peasants' and other minorities. The definition is worth quoting in full, as it applies to many, but not all, of the human populations under study here:

The term 'tribal people' often shortened to tribal or tribe, is employed here to characterize a specific type of population. Such groups typically have stable, low-energy, sustained-yield economic systems. More specifically, the people may be hunter-gatherers, shifting agriculturalists, herders, simple farmers or fisherfolk. The populations included in this terminology exhibit many, if not most, of the following characteristics:

- (a) geographical isolation or semi-isolation;
- (b) unacculturated or only partially acculturated into the national society;
- (c) non-literate; not possessing a written language;
- (d) non-monied, or only partially monetized; largely or entirely independent of the national economic society;
- (e) ethnic distinctiveness from the national society;
- (f) linguistic difference from the national society;
- (g) possessed of a common territory;
- (h) economic base more tightly dependent on their specific environment;
- (i) possessing leadership, but no national representation, and few, if any, political rights.

(World Bank, 1981: 5)

The report suggests that special provisions be made for such societies when they are encountered in areas which are being targeted for national or regional development and for which World Bank loans are solicited. Since their economic system is not energy intensive, and depends upon an intimate relationship with a given ecosystem, the Brazilian Indians require a fairly large geographical area. Any reduction or alteration of the ecosystem will have drastic effects on the groups involved.

In their dependence on the ecosystem, the tribal societies resemble the flora and fauna of the region, and it is significant that the report was written within the Office of Environmental Affairs. Such an attitude, although important for the protection of the tribal societies, has often led to the superposition of ecological reserves and Indian areas. Although the initial relationship between the Indians and the ecosystems resembles those of the other species, that is a temporary state of affairs. A misconception about human societies can cause serious problems.

TRIBAL SOCIETIES IN BRAZIL

There are approximately 140 Brazilian Indian societies, speaking many different languages, and found unevenly distributed among all the states, with more than half of them found in the Amazon region. The size of the groups is fairly small, ranging from communities of a few individuals to loosely designated 'tribes' (communities in contiguous areas that speak a mutually intelligible language) of eight to ten thousand. The total Indian population in Brazil is not thought to exceed 200,000. Under the Brazilian constitution the Indians are guaranteed permanent possession and exclusive usufruct of the natural riches and the useful resources existing on their traditional territory (Article 198).³ They have a national guardian, in the form of the National Indian Foundation (FUNAI), whose ends are, among others, 'to assist and protect the forestdwellers, their culture, and their patrimony: to guarantee to the Indian the unalienability and the permanent possession of the lands they inhabit' (Presidência da Republica, 1981:1).

The Brazilian Indians, whose diversity makes them more difficult to assist and protect than their small numbers would indicate, are commonly divided into four categories according to the degree of their contact with the national society, and particularly their integration into the regional economy and their dependence on manufactured goods. These categories generally follow a scheme elaborated by Darcy Ribeiro (1957, 1977), dividing the groups into *Isolated*, *Intermittant Contact*, *Permanent Contact*, and *Integrated*. (The Indian Statute reduces these to three: *Isolated*, *In the Process of Integration*, and *Integrated*; the World Bank uses the four classifications.) This division overlooks important differences among the groups, and may give the false impression that it is the fate of all societies to start out 'isolated' and end up 'integrated'. In fact most Brazilian Indian societies have been decimated, become extinct, or been forced against their will to 'integrate' into Brazilian society rather than follow the ideal pattern described below. Even so, the categories are useful heuristic devices if used with care.

Isolated groups are those that are completely uncontacted, or which rarely enter into contact with members of the national society. They are virtually autonomous and are characterized by self-sufficiency. Groups in *intermittant*

the Indians' own physical survival has been denied to them in the name of conservation. The political and economic autonomy of many groups and their access to their traditional lands and resources, in certain cases come dramatically into conflict with the elementary requirements of adequate conservation.

CHANGING RELATIONSHIPS BETWEEN NATIVE AMERICANS AND THEIR ECOSYSTEMS

By Brazilian law, the Indians are given the judicial status of 'relatively minor', which characterizes children between the ages of 16 and 18, the infirm, the mentally ill, and a few other categories. The National Indian Foundation is the government appointed guardian. This status for the Indians, in spite of its ambiguity, brings with it a number of benefits: collective ownership of land, less-than-full responsibility (for crimes which may arise out of misunderstanding rather than criminal intent), and protection from some of the most flagrant abuses seen in other countries at other times—such as the exchanging of large areas of land for small amounts of liquor (as happened repeatedly in the United States). The success of the law depends on the ability and sagacity of the guardian, and its dedication to acting in the long-term interests of its wards. Sagacity and loyalty to its wards have not always characterized the actions of the National Indian Foundation, which is poorly accommodated within the Ministry of Interior, many of whose overall policies are not in the Indians' interests.

One of the aspects of the special status of native American communities in Brazil is that they are not ruled by Brazilian laws regarding the protection of endangered species, and the hunting, fishing and exploitation of natural resources.

The Indian immunity has meant that they are often employed as professional hunters. They kill for pelts of endangered species, or engage in commercial hunting and fishing where it is prohibited, and sell their catch to smugglers who make large amounts of money on the transaction. The contraband is widespread including, in addition to pelts and flesh, pet birds and mammals, orchids, etc. (see Carvalho, 1981).

Another cause of the depredation of natural species is the commercialization of Indian artefacts as tourist art. Indian artefacts have a wide market within the cities for both Brazilian national and foreign buyers. Almost universally, the agencies which work with the Indians commercialize their artefacts: missionaries, local traders, and the Indian Foundation. The Indians themselves may also sell artefacts along highways in the more densely populated parts of the country. The most intense commercial development of Indian artefacts has been undertaken by the Brazilian Indian Foundation whose *ARTEINDIA* stores are found in most major airports, bus stations

Seguro, the Karajá of the Ilha de Bananal, and the Yanoama of Roraima. They all have in common the juxtaposition of national parks and Indian areas. The things that vary are temporary: the relative size of the Indian and conservation areas, the density of the regional non-Indian populations, and the means and ends of resource use on the part of the Indians. All of these are likely to change over time.

The Pataxó: struggle over a symbol and survival

The Atlantic Forest which once covered the coastal regions of Brazil, has almost completely disappeared. Clearing for agriculture and intensive lumbering reduced it to small areas in Bahia and Santa Catarina. One of the isolated remainders is in the municipality of Porto Seguro, in the south of the State of Bahia. Faced with the extremely rapid deforestation in the 1950s, the Mount Pachoal National Park was established by decree in 1960. The area of the Park was then inhabited by both Indian and non-Indian populations. Their holdings were expropriated, but only the non-Indians were actually removed. A group of Pataxó remained within the confines of the Park (Agostinho da Silva, 1978).⁴

The presence of the Indian community on National Park lands led to conflict between the National Indian Foundation and the National Institute for Forest Development (IBDF) which is responsible not only for the protection of flora, but for the protection of fauna as well (by separate acts: law number 4771 of 15 September 1965 on forests, and law number 5197 of 3 January 1967 on the protection of fauna).

The Brazilian Indian Foundation began to take measures to turn the area occupied by the Pataxó into Indian lands in the 1970s. In response, the IBDF began to persecute the Indians, prohibiting both subsistence and market-oriented economic activities within the National Park. The Indians were warned off the Park and their small garden plots were destroyed when discovered (Agostinho da Silva, 1978:2). They were reduced to collecting crabs on the coastal waterways and to manufacturing and selling artefacts. In spite of this, the Indian population increased during the decade to over 700, as dispersed Pataxó moved to Porto Seguro in the hopes of obtaining some land.

The lands occupied by the Pataxó had been designated as Indian lands in 1861, and occupied by them at least since 1892, according to a census in that year. Their legal rights to continued occupation of the area are quite clear; equally clear is the imminent extinction of the Atlantic Forest.

A team of anthropologists from the University of Bahia studied the Pataxó and suggested maintaining the group in its present location and made a calculation of the land area required by the group—an area which assured them swidden plots with rests of 30 years, giving a total of 2197.8 hectares. Then they calculated a 3 per cent growth per year for 23.5 years (approximately a

and cities. In addition to the deleterious effects on the native crafts, the traffic in artefacts may lead to the exhaustion of the natural raw materials. Instead of fabricating twenty parrot or macaw feather headdresses in a year, a group may start to produce two hundred or more, with resulting pressure on the parrot population. Although feather art is the most obvious difficulty—domestic species do not have the same colourful plumage, even when their feathers have been dyed—even such apparently innocuous crafts as basketry may lead to the disappearance of a given plant species in a large area. Although apparently a good way of exchanging manufactured goods for a marketable product, native artesanry gives official sanction to further depredation unless it is undertaken with great care.

The Indian societies, which desire the manufactured goods that make their lives easier (at first) and then as they adopt non-Indian attitudes, believed by them to be more 'civilized', are stimulated to alter their relationships with their ecosystem and to exploit it with greater intensity. But that is not the full extent of the alterations. The National Indian Foundation, and its predecessor the Society for the Protection of the Indians (SPI) have initiated large projects on a number of Indian areas: rice, soybean, and coffee plantations, Brazil-nuts, cattle raising and lumbering have been among the largest of the many activities engaged in. The rationale is that the Indian lands should produce enough revenue to pay most of the expenses of the maintenance of the Indians throughout the country. The general effect is that the land and sometimes the labour of a given society is used, but the money does not return to the Indians who are guaranteed the usufruct of their holdings. It goes to Brasilia where it is incorporated into the Foundation's budget and pays for other projects. In some parts of the country, especially the South, the exploitation of the Indian reserves by the agency that should be looking after their interests, as well as unchecked illegal commerce, has resulted in the denuding of Indian forests and the loss of irretrievable patrimony (Simonian, 1981). When the processes described above result in the scarcity of needed natural resources on the Indian reserves, the Indians will put increasing pressure on any conservation areas nearby.

Finally, even after many years of contact, the Indian communities are largely dependent on wild protein for subsistence. They share this dependence with most of the peasant population of the Brazilian interior, whose principle animal protein is derived from fish and game. Indian lands are often invaded by non-Indians for hunting, and the resources of reduced areas will prove to be inadequate. Some Indian lands are also inadequate for agriculture; they may be forced to use conservation areas for subsistence agriculture and hunting or fishing.

Below I will describe briefly three quite different cases which illustrate some of moral difficulties and legal intricacies of the relationships between conservation and Indian rights. These are the case of the Pataxó of Porto

villages frequently. During the last five hundred years they have expanded their territory considerably, occupying the areas of other societies (Seeger, 1981). Other societies, such as those in the Northwest Amazon (Upper Rio Negro), are extremely concerned with the maintenance of relationships both with natural species and with other human groups, through contention and restrictions on hunting (Reichel-Dolmatoff, 1976). These communities have not moved much during the last few hundred years, and seem to establish fairly complex relationships with both riverine and forest ecosystems, as well as with other Indian groups (Goldman, 1963; Wright, 1980). Between the high mobility of the Gê and the sedentary characteristics of the Tukanoan societies, with their respective attitudes toward natural species, may be found many other Brazilian Indian societies. Thus it is incorrect to say that the Indians are 'naturally' conservationists. Although the Brazilian Indians may not have made profound alterations in their ecosystems before contact, this does not always mean they had a cosmological commitment to conservation; often it is simply because they had no choice.

In spite of these real differences among the groups, in the eyes of the Europeans the native americans were 'nature people' (*Naturvolken*) or 'beings of the forest' (*silvícolas*) whose lifestyle was 'natural'. That is still an idea very present in many conservationist movements in Brazil and abroad. Seen from this perspective, it is quite appropriate that Indian reserves and areas devoted to protecting natural species should be established jointly.

When attempting to establish Indian reserves or conservation areas, it is important to establish them before extensive development of the region, with its accompanying deforestation, depletion of natural species, and massacre or infection of unprotected Indian communities by disease. Under these conditions, the Indians' relationship with their own ecosystem is usually little altered. It is especially useful to ally conservation with Indians because the political force is greater when the two groups make common cause (and it is consequently seriously affected with the two groups fighting among themselves). But it is important not to overlook the differences between native and animal populations.

The prime difference between human societies and natural species is that human societies are far more adaptable. The Brazilian Indians, once they have made contact with segments of the national society, have inevitably changed their relationship with their ecosystem. Even if they retain their traditional lands (which is certainly not always the case), they begin to exploit them more intensively and with greater selectivity. This change in their relationship is the direct result of their entry into the regional economy, to their peculiar legal situation in Brazil, as well as to the activities of the Brazilian Indian Foundation. In many cases the Indians have been used as agents for the depredation of natural resources or the decimation of natural species by non-Indians. In other situations, however, access to the resources necessary

tected species that are still to be found in the region, such as the ararinha (*Pteronura brasiliensis*) the jaguar (*Leo onça*), and the jacaré (*Melanosuchus niger*), the Indians are paid to hunt them. Since commercial fishing and hunting are prohibited, the Indians are encouraged to fish and hunt for turtles for resale (Dante Teixeira, personal communications). The Indians are not the only ones to exploit the legally protected species, but their legal protection and subsequent exploitation is quite serious in its long-range implications.

The Karajá are among the most prolific suppliers of Indian artefacts in the nation. They are particularly famous for their clay anthropomorphic figures (Fenelon Costa, 1968), but they also produce a number of other 'Indian' items such as small bows and arrows, certain feather ornaments, wood carvings, and so forth. The raw materials for some of these require large-scale predatory expeditions. In 1980 a group of Karajá men on collective hunt for the Colhereiro (*Ajaia ajaja*) whose feathers are used in artefacts, resulted in a kill of between 250 and 300 individuals (Dante Teixeira, personal communication).

There can be no doubt as to the legitimacy of the Indian claims to the resources of the Island. The situation is not as desperate as that of the Pataxó in Porto Seguro, because the population density is less, the Indians have lands of their own—on which the National Indian Foundation is raising cattle for sale and the regional population is far less. One cannot neglect the seriousness of the illegal occupation of large parts of the island and parts of the Park by non-Indian ranchers, however. The difficulty on Bananal is that the Indians are often used as agents of middlemen who supply pelts, fish and pets to the national and international markets, thus altering in fundamental ways their relationship with the ecosystem, and affecting their own patrimony as well as that of the nation.

The Yanoama: the search for an adequate solution

The Yanoama are Brazil's last large group of isolated tribal communities. Located on the Venezuelan border in the Territory of Roraima, the Yanoama are in fact five dialect groups with a population of perhaps 8300 on the Brazilian side of the border, living in something over 200 widely scattered communities. These communities maintain complex relationships of inter-marriage, alliance, and feuding among themselves (Ramos and Taylor, 1979). Their exploitation of the ecosystem is quite traditional: they do not supply regional markets and in fact they have only sporadic relationships with representatives of the national society.

During the last five years there has been an international campaign to provide adequately for the future of this large and vulnerable group. This campaign, begun in Brazil, seeks to assure them adequate lands, protect their health, and control the development in the northern part of Roraima. Since

meters of the national political arena. Since the Indians are perceived, somewhat romantically, to be part of the 'natural' ecosystem, there has been a tendency to superimpose Indian lands and conservation-designated areas. This has been done by multiple usage, by creating national parks within Indian areas, or by the simple existence of Indians in national parks. But native American societies alter themselves far more than the animal populations, and attempts to provide for both in the same, or in limited adjacent territories, are often based on erroneous logic, or no logic at all. The political possibilities of a united front consisting of both conservationists and Indian rights groups makes a joint effort for establishing multiple-use areas quite reasonable, and it also makes disagreements within the ranks so much more serious.

This paper has argued that Indian societies do not necessarily maintain a single relationship with their ecosystems. They are capable of considerable transformation and long-term survival, as is the case of the Pataxó who have had hundreds of years of contact, and yet who would still rather re-group on land of their own rather than disperse into the local population. The examples cited also show the Indian populations are used by non-Indians to exploit natural resources protected by law. It has been shown that where the resources are limited, the confrontation between Indians and forest management has no real solution. In Brazil, however, there are large tracts of land which are not occupied by indigenous inhabitants. Therefore it is possible to reach solutions which satisfy both parties, if land is set aside before the regional population grows. Instead of conflicting over multiple-use areas, conservationists, Indians, and Indian rights groups will have to join together for a separation of areas in such a way as to guarantee the national patrimony and the tribal rights.

In the case of the Yanoama Park proposal, the areas of competence will have to be defined with extreme clarity, and provisions made for educating both Indians and non-Indians about the usage of the different areas. It is a solution for immediate problems, but it will raise new ones which are best solved now. What will be the Indians' rights in the non-Indian part of the Park? Which areas will serve for what ends? How will this be decided? When can the decisions be renegotiated? What appeals will be granted to the Indians? All of these are questions which should be worked out as soon as the solution is found—if it is a multiple-use kind of solution.

This paper has discussed the difficulties arising where Indian lands and National Parks, or conservation-oriented areas are superimposed or connected. But native populations are certainly not the only threat to the survival of natural species. The lack of adequate policing, with the resulting extensive contraband of pelts, timber, meat, pets, and other resources, is also an important factor. Even more important, the local populations in Brazil must have an alternative to wild animal protein accessible to them. Carvalho (1981)

intermarriage and freedom of movement are important for the groups, it has been argued that a single, large, continuous reserve (formally a *Parque Indígena*), would be the only way to meet the needs of the groups and to honour the constitutional guarantee. The suggestion, fully described in *The Yanoama in Brazil 1979* (Ramos and Taylor, 1979) suggests a Park with a total area 6,446,200 hectares. This includes 3,270,800 hectares of the area which are covered by environmental protection laws by virtue of their altitude, or their low natural capacity.

A total of 74.14 per cent show the characteristics of an environmental protection area (Ramos and Taylor, 1979: 138-139). The National Indian Foundation made a counter move, and decreed 21 areas ranging from 10,900 hectares to 442,500 hectares, with a total of 2,228,270 hectares. The difficulties of these small areas are the facility with which they could be invaded by non-Indians, and the impossibility of the free migration of the groups. Furthermore, moving groups around to place them in small reserves is extremely delicate, due to their dependence on rather specific ecosystems. (Ramos and Taylor, 1979: 141). The authors suggest that

The area of the proposed Yanoama Park is particularly suitable not only for the preservation of an ecologically noteworthy region, but also for the protection of the last large nation of Brazilian Indians, with no detriment to regional development. (Ramos and Taylor, 1979: 136.)

There has been an impasse over the Yanoama case, which awaits a final decision. The search for this solution has resulted in a compromise suggestion for a multiple-use area—one that would allocate certain regions as Indian areas, others as ecological areas, forest reserves, and national parks, and yet others as areas under military control.

At first sight a multiple-use area would seem to be an ideal solution for the Yanoama. They could continue to live where they are, and they would be protected from many of the ill-effects certain to come from the establishment of many mini-reserves through the federal control of the lands between Indian areas. But is it an ideal solution? Viewed in the light of the cases we have already discussed, there are a number of conflicts that can be predicted. The Yanoama population, it is to be hoped, will increase over time; their use of their areas will inevitably change due to their integration in a regional, national, or international economy. How will the flora and fauna be protected? How will their own futures be protected?

CONCLUSIONS

The preservation of natural eco-systems and species, and the protection of tribal people are, at one level, parallel endeavours. Both must be provided for at the earliest possible instance, and both must be protected within the para-

generation) and a 20 per cent growth through in-migration of relatives, and came up with the figure of 5300 hectares of necessarily rich agricultural land for the group. This suggestion, carefully developed using cultural and economic criteria, was ignored. It was considered too large an area of the remaining forest. Instead the Pataxó were allotted lands that are unsuitable for agriculture, and are once again reduced to hunting for crabs and selling artefacts. The population is declining as the community disperses in a search for adequate living conditions.

The impasse in Porto Seguro is the result of the injustice on both sides. The area that remained was inadequate to meet the Indian needs and still preserve the Atlantic Forest. The issue is quite clear. The National Park was established too late, when little option remained except for lands already occupied by Indians for over 90 years. The total amount of land area included was too small to share with the Indian population which could be expected to grow. Two alternatives would have been possible: in 1960 to have reserved a larger area for the National Park, assuring the rights of the Indians, or to give the Pataxó an ample reserve in the rich agricultural areas to the North. The social and economic costs of disappropriation would be extremely high, and constant vigilance would be necessary to protect the Indian lands from invasion. The solution reached was the worst possible for the Pataxó. They were allotted lands totally inadequate for subsistence agriculture.

The Karajá, agents of depredation

Bananal Island, a large riverine island which lies between the states of Goiás and Mato Grosso, is formed by two branches of the Araguaia river. Early explorers of the river encountered the Karajá Indians resident on the island and in adjacent areas. Today, the island has a National Park with a total of 563,312 hectares in the north, under the jurisdiction of the IBDF (although there is also a Karajá settlement on the northern tip). The central part is an Indian reserve, in which are found most of the Karajá tribe, and in the South there are large cattle ranches. All parts of the Island, including Indian and National Park lands have been illegally invaded by cattle ranchers. Some estimates put the number of illegal ranches at over one hundred (José Candido de Melo Carvalho, personal communication).

The Indians are principally, and traditionally, a riverine population. With a long and difficult history of contact, the Karajá still maintain many of their traditional customs and subsist on the products of their gardens and rivers, as well as the income from their extensive sale of artisanry and illegal commerce in natural products. The contact situation in the region is quite complex; the National Indian Foundation (FUNAI) has invested considerable quantities of money and personnel in the area, and yet the difficulties persist.

Since the non-Indian populations are prohibited from hunting the pro-

Table 1 Meat prices in suburban Manaus (Carvarho, 1981)

Mammal	Price per kilogram of meat
Capybara (<i>Hydrochaeris hydrochaeris</i>)	US\$2.00
Freshwater porpoise (<i>Trichechus inunguis</i>)	US\$1.35
Wild pig (<i>Tayassu pecari</i>)	US\$1.35
Deer (var. species) (<i>Mazama</i> spp.)	US\$1.35
Armadillo (<i>Dasypus</i> spp.)	US\$1.00
Domesticated chicken	US\$3.00
Domesticated pig	US\$2.00
Beef	US\$5.85

cites the prices of the flesh of a few wild and domesticated animals in suburban markets in the city of Manaus (Amazonas) which I think speak for themselves (I have converted the prices he gives into dollars at the September 1979 rate of exchange—the time when the data were collected). These are listed in Table 1. Since the minimum monthly wage at that time was approximately US\$110.00, it can be seen that the local populations cannot afford *not* to eat wild species. Some provisions will have to be made to change this dependence on the natural ecosystem by an ever increasing population.

The survival of the flora and fauna depend on massive appeals to public opinion and also to alterations in the material conditions of life in the region. The survival of the Brazilian Indian societies depends upon the permanent guarantee of their lands, continued health and education assistance, and increasingly on technical advice so that they do not repeat the mistakes made by sectors of the national society on their own patrimony. Special attention should be given to the deleterious social and ecological effects of artefact production and large scale ranching, as well as to the possibility of substituting raw materials and planting or raising the sources of the materials used. The Brazilian Indian Foundation must be especially careful not to destroy the patrimony it is entrusted with preserving by ill-advised large scale projects on Indian lands.

The issues of conservationism and of Indian policy are quite distinct. They should not be confused. The price paid eventually for mistakes at the start is a very high one, in both human and ecological terms.

NOTES

1. I would like to thank my colleagues at the Museu Nacional who read earlier versions of this paper or discussed the ideas with me, especially José Cândido de Melo Carvalho e Dante Teixeira.
2. I use the phrases 'native American' and 'Indian' interchangeably here, since in Brazil the word 'Índio' is always used and the phrase 'americanos nativos' would refer to US citizens, not Indians.

3. For a recent bibliography on the Brazilian Indians see Seeger, 1980. Chapter 7; for an introduction to the Brazilian Indians in general. see Melatti, 1972; for a history of their contact with national society, see Ribeiro, 1970; for a discussion of the effects of development on some of the groups indicated see Davis, 1977; for up-to-date reports see Anthropology Resource Center, 1979 ss.
4. Most of my information for this section comes from the paper cited (Agostinho da Silva, 1978) and from personal communication with the author; another important source for further clarification of the Pataxó situation would be Carvalho (1977). José Candido de Melo Carvalho (personal communication) also clarified some important points.

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