

# THE IMPORTANCE OF FOREST RESERVES AND GAME SANCTUARIES IN TRINIDAD AND TOBAGO

*(From a lecture originally delivered to the Club in March 1970)*

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Trinidad and Tobago together comprise 1979 square miles or approximately 1,266,560 acres. Approximately 45% or 560,000 acres of land surface is covered by forests. Government owned forests dedicated solely to Forestry are known as Forest Reserves. In Trinidad (1863 sq. miles) there are 34 Forest Reserves which comprise together 329,681 acres; ten of these are less than 1,000 acres in extent. In Tobago (116 sq. miles) there is one covering 9,776 acres.

There are also 13 Game Sanctuaries and 6 Nature Reserves comprising together 40,705 acres and 915½ acres respectively. Many of these Sanctuaries and Nature Reserves are located within Forest Reserves. In addition, therefore, to the area under Forest Reserves there are 4,209 acres and 2 acres under Game Sanctuaries and Nature Reserves respectively.

The reservation of lands for forest reserves was started in 1902 and completed in 1962. These lands have been strategically located and were chosen for reasons of :

- (i) Topography to avoid landslips and erosion and to protect low lying agricultural lands from heavy winds and sea blast.
- (ii) Soil infertility because of their inability to sustain intensive agriculture for long periods.
- (iii) River catchment to ensure detention and retention of water falling as rain, to avoid disastrous flooding in low lying areas and to maintain regularity of water flow in our rivers, which is so vital to life in any community.

The future well-being of any small, heavily populated country will always depend to a great extent on the wise use of its available natural resources. I refer particularly to the resources of land, wood and water. Up to a few decades ago the popular belief was, and perhaps still is in certain cases, that foresters manage forest lands solely for timber production. But as a result of increasing economic, political and social pressures from an expanding world population, there was need for this idea to be revolutionised. Hence the concept of multiple use of forest land which advocates that foresters must be **Land Managers**. Basically, therefore, the forester must be concerned with what the **land** can produce and not with what the **forest** can produce.

In many cases all forest lands are not productive from the viewpoint of yielding commodities of commerce and trade. However, some of these non-productive areas often have — although intangible — aesthetic

and other social and scientific values. Forest lands can therefore be managed simultaneously for several uses, but for maximum effectiveness management ought to be directed to the use with the greatest output without excluding other compatible uses. For example, a forest managed primarily for timber production, with comparatively small modification and adjustment can provide watershed, wildlife and recreational values.

At this stage I would like to develop these uses and other values of our forest reserves and game sanctuaries which have special import, particularly in a country like ours which is now experiencing an unprecedented population growth and attendant pressures on forest lands for agriculture, highways, gravel-pits, urban expansion and industrialisation.

The values of Forest Reserves and Game Sanctuaries are closely interwoven, interrelated and interdependent. No one value can be singled out without the interplay of another. However, for the convenience of preparing this paper these have been broken up into several headings. In this way treatment of individual values help to provide us with certain explanations and answers which in turn assist us to appreciate better the complexities and overall value of these areas.

### **WILDLIFE VALUES**

All animal life depends upon plants. Of all living things vegetation alone is capable of producing its own food using the elements from the air, water and soil. It is therefore necessary to preserve forests and plants to nourish wildlife. In turn animals and birds destroy harmful insects, disperse seeds and pollinate flowers.

Forest Reserves and Game Sanctuaries are therefore significant in many ways. They are the natural homes of wildlife, both predator and prey, because of the food, water, shelter, protection and privacy which they provide. As such they are instrumental in saving rare and vanishing species from extinction, e.g., the Paui, the Bird of Paradise. A zoological garden may be a good last resort for seriously threatened species but it is not an adequate substitute for a wildlife habitat.

How exciting it is to see our wild animals in their natural habitat, as opposed to viewing them in closed cages in the zoo. Zoo animals tend to behave abnormally and lose their natural colour and character, e.g. Scarlet Ibis often loses its hue in captivity. Wild creatures are a source of wonder, inspiration and beauty. Their ecological studies are fascinatingly educational. From the socio-economic view-point they provide us with food and sport. Furthermore, they are of great importance to farmers in keeping down insect pests. The Cattle Egret in Trinidad today is as much a saviour to the agriculturist as the use of pesticides, etc. There is much excitement in viewing dangerous wildlife (mapepire), just as there is pleasure in watching the grace and charm of the harmless Scarlet Ibis or the agouti nibbling away at its food. Hunting wild animals with a camera provides much interest; but can we really describe the excitement and satisfaction derived by the bird-watching enthusiast who, after several hours of patient waiting, is able to view his bird in all its splendour! What appeal would our forest reserves have and furthermore, how barren would they appear to be in the absence of the squawking of parrots, the hammering of woodpeckers, the screeching of owls, the music of songbirds, the barking of the wild dog, the howling of monkeys, and

the darting to and fro of insects and butterflies. The fascination and curiosity which wildlife excites is often indescribable.

Without proper conservation measures, no natural resource is more vulnerable to quick and irreversible loss than the wildlife of a country. The fauna of a country is destroyed in two ways — directly, through killing; and indirectly, through modification of the habitat. An animal or plant does not exist by itself, independent and isolated. Together, however, the forest and animal components form a biotic community in which there is interaction, competition and interdependence. All life in a Forest Reserve or Game Sanctuary is intimately connected with other life in a chain of relationships. So intricately woven and harmoniously balanced is the tapestry of forest life that destruction of one vital component invariably snaps the thread of the pattern of life in the forest. The most common effect is the creation of an environment favourable to some species and inimical to others. This often results in the temporary over-abundance of one species which may lead to a consequent food shortage and crash of the population. The preservation of wild animals is therefore dependent upon the major consideration, the preservation of the forest habitat.

But what is the justification of preserving wildlife and setting aside large areas of land for their protection. Is it because they are beautiful to look at? Is it because they provide us with sport, food and clothes? Is it because we are afraid of the Supreme for destroying his creation? Or is it because our consciences prick us, instil pity into us and make us feel sorry for them?

Firstly, ours would be a selfish generation if we should bequeath posterity with an environment devoid of nature's handiwork.

Secondly, as *homo sapiens* it is a responsibility on our part to the animals themselves for their inalienable natural rights.

Thirdly, and most important, however, is that each living organism ranging from the earthworm and plankton to the largest animal and plant has its part to play in a vital conversion cycle upon which our own very existence depends — e.g., sun, soil, plants, animals and back to soil, each of which except the first mentioned goes through the processes of birth, death, decay and rebirth.

### SCIENTIFIC VALUES

Man's scientific achievement has been attributed largely to his knowledge derived from understanding nature. Forest Reserves and Game Sanctuaries are good outdoor laboratories for the geographer to study the unadulterated physical features present and for the geologist to study the landscape formation. They are also ideal havens for the biologist to undertake ecological studies of wild animals and plants, particularly the causes and effects of their cycles of birth, death, decay and rebirth and their interrelationship, interdependence and interaction with the climate, soil and kinds of their own. The following is an illustration by Huxley, which, though amusing, brings home the point quite vividly :-

“Darwin discovered that clover was fertilised by bees. If the bees were not there the red clover would become very rare, or wholly disappear. The next step was the discovery that the bees’

worst enemy is the field mouse, which destroys combs and nests. Then, said Darwin, the cat enters the picture, because if there are many cats killing mice there will be fewer mice to worry the bees. Huxley took over and said that most cats were owned by unmarried ladies, hence the more unmarried ladies, the more cats, the fewer mice, the more bees and the more clover. Further, he said, England's greatness is built largely upon good British beef, which in turn depends upon the clover pasture."

A study of nature is always intriguing. Closer to home is a tree trunk with its crown broken off by high winds in the Arena Forest. Even though not as spectacular as other topless creations the damaged trunk has an important wildlife role. It acts as a perch for several types of birds as long as it remains standing, and depending on its height makes a suitable home for our parrots. With time the trunk starts to deteriorate. Underneath the bark there exist myriads of insects, which become food to insectivorous birds. After the roots have rotted away, the trunk falls to the ground and in turn becomes a suitable abode for the agouti. Thus it may seem that in the scheme of nature we should avoid destroying those things, the existence of which we do not comprehend.

The progress of today's geneticist is limited to the extent of the wild stock with which he has to experiment. All our domesticated plants and animals have had their origin in some wild organism. Genetic improvement of these requires going back to the original stock. Forest Reserves and Game Sanctuaries therefore are reservoirs of raw materials from which further improvement can be effected. If we destroy every wild area, we will in fact be depriving future generations of genetic possibilities which we may not be able to perceive now. E.g. to cultivate the balata tree for its fruit as an orchard crop, we need to search the wild for a short bole tree.

There is also the belief by some researchers that inviolated reserves could contain certain soil micro-organisms and molds which could be important in human therapeutics. Here it is the act of discovery which gives value to the preservation of the land.

Some of the wild plants in our forests have special adaptations and interesting growth habits. Commonly referred to as a strangler, the Matapal tree (*Clusea rosea*) begins its life as an epiphyte by germinating in the crotch or crevice of a tree. The seedling puts out two kinds of roots; one seizes the branch and serves as a grapple to hold the plant in place whilst the other hangs loose and grows to the ground. Until the roots reach the ground the Matapal is an epiphyte obtaining small quantities of water and nutrients from the debris in the tree crevice. When the roots reach the ground a maze of additional feeding roots descend to the soil eventually encasing the host tree. The roots thicken and unite with each other. Finally the host tree dies after having been thoroughly encased inside the united roots which now form a somewhat hollow trunk.

Furthermore, some of our forest plants are good soil indicators and therefore are of considerable assistance to the forester and agriculturist in deciding on the type of land management which could be carried out on certain areas. The carat palm is generally a good indicator of rich soils, whilst the cocorite palm is an indicator of poor soils.

The time of flowering of the poui, apamate and immortelle varies from year to year. Flowering is closely related to a combination of minute weather changes. The appearance of our forest tree flowers and the flushing of new leaves in the Mora forests help us to interpret small temperature and weather changes to which we are generally not very sensitive.

In addition, the existence and location of a certain plant species is often a clue to its past history of migration and past climatic condition. I refer specifically to the Aripo savannah and its existing flora.

Each year second year Agricultural and Science students of U.W.I. visit some of our Forest Reserves to observe different systems of Forest Management and to study their effects on erosion and soil development. Lands reserved for Forest and Game Sanctuaries are therefore valuable areas against which comparisons of various patterns of land use can be made.

Lastly, within recent times there are various reforestation projects to repair denuded and burnt out lands and to reintroduce wildlife in the areas. The reserves and sanctuaries are good storehouses from which to obtain locally adapted plants and animals to re-establish such areas.

## **TOURISM**

World tourism is now on the increase because of low air fares, "fly now, pay later" plans, vacation benefits available to workers, rising incomes and more leisure time. In addition, the luxuries and comfort of travelling are much better now than yester-year when travel was slow, uncomfortable and costly. Tourists and vacationers travel from one country to another to enjoy the good things, the unusual things.

In its campaign to lure tourists from overseas the Caroni Game Sanctuary, the Bird of Paradise Island, the Asa Wright Nature Centre, are included in the list of special attractions which this country has to offer. It is extremely difficult to put a price tag on any of these areas, but judging from the number of people who visit them there is no doubt that they are responsible for generating much domestic and overseas tourism resulting in much money being poured into the economy. A vacationer in this country must spend money for transportation, hotel accommodation and meals. The scenic beauty of our reserves and charm of our wildlife is already being sold over and over again without them being destroyed. As such they are inexhaustible resources and if properly managed can be rated with exportable goods in earning foreign currency. What in fact is really exported is the goodwill, warmth and appreciation of the country.

Overseas tourism brings not only money but also intelligent curiosity and questions which stimulate and help to develop the minds of our people. Tourism provides us with a common base to meet different people, to exchange ideas with them and to learn directly from them of their lands, customs, habits and cultures. Besides, their presence helps to awaken our people to appreciate their own heritage, which in fact is important in nation-building, particularly at this stage of our independence.

## **ECONOMICS**

Our Forest Reserves can make a much larger contribution to the economy of this country than is now the case. In 1967 approximately

2,855,000 cubic feet of timber were sold from our forested areas, producing a revenue of approximately \$597,000. The present rates at which timber on Government lands is sold are extremely low. A merchant buys Cedar at 24 cents per cubic foot standing, but sells the same at the roadside for anything ranging from 85 cents to \$1.20. When sold by girth, Government charges \$2.50 per girth foot, whereas the same tree on private property fetches as much as \$7.50 per girth foot. These rates, however, need to be revised upwards.

In 1967, 2,634 Game Licences were sold at \$5.00 each. If we assume that each one of these persons paid licence for their shotguns solely for hunting purposes, then the total revenue obtained is \$13,170 + \$26,340 or \$39,510.00. But this figure could be increased considerably if we could only put a dollar value on the meat obtained from our wild animals and oysters, on the amount spent on travelling to Forest Reserves for hunting purposes, on the amount spent on purchasing shotguns, cartridges, torchlights and other hunting gears and on the amount spent on rearing hunting dogs.

Our Forest Reserves therefore can be a continuous source of wealth without loss to themselves or to us, provided of course that their values are appreciated and their management properly effected.

## HISTORY

Mention of several wild animals and plants occur in the various religious books. If these books are to stand up to scrutiny, if they are to be meaningful and be appreciated for what they are worth then areas supporting these creatures ought to be preserved. We in this country are fortunate to have existing here some of these animal species, such as the crocodile, deer, ass, dove, and monkey, and plant species such as the Laurier, Cedar, Incense and Eucalyptus.

Furthermore when this country's history is being written or revised, the failure to record :-

- (i) the role of Balata in the early days of transportation for rail-sleepers, cart wheels and bridges;
- (ii) the use of the floss of Bois flot for making pillows ;
- (iii) the use of Timite leaves for thatched roof houses;
- (iv) the use of Calabash as water containers ;
- (v) the burning of the sweet smelling incense wood during certain rituals and religious rites ;
- (vi) the Silk cotton tree and the legendary stories of the soucouyant and La Diabliesse;
- (vii) the Bois bande tree and the popular stories associated with it for its aphrodisiac properties ;
- (viii) the use of Jereton for manufacturing matches;
- (ix) the Ryania, noted for its insecticidal properties.

would in my opinion be grave omissions in tracing the cultural development and background of our country.

### **WATERSHED PROTECTION**

Air, water and the multitudinous fauna which inhabit soils constitute more than half of the volume of a given unit of forest soil. This means that the porosity in forest soils is very high, which in turn influences considerably the infiltration of water. In addition, the surface accumulation of organic matter has a high water-holding capacity, similar to a sponge. It is a combination of these two conditions which make forests perfect natural reservoirs for rain water. The destruction of forest cover dangerously reduces the water-holding capacity of the soil and increases water run-off. A stream in the forest runs clear and steady as opposed to a stream whose head water areas have been cleared and exposed. Forest removal invariably affects water yield.

Forest Reserves and Game Sanctuaries are therefore important areas for trapping and storing water. Developed lands on the other hand seal off, over considerable areas, the pores through which water enters the soil by virtue of the numerous houses, car parks, pavings and roads. But developed lands because of industrialisation and high population densities also have high water requirements. Our forest reserves and game sanctuaries are undoubtedly significant for trapping, storing and feeding our underground springs with water to avoid water deposits being exceeded by our water withdrawals, which before long could result in water bankruptcy in Trinidad and Tobago. Good regimen ensures purity and regularity of water flow. The prosperity of Trinidad and Tobago depends on all adequate and continuous supply of fresh, clean water.

### **SOIL PROTECTION**

As mentioned earlier our Forest Reserves were chosen for reasons of topography, soil infertility and hydrography. Forest cover breaks the plummeting force of raindrops reaching the ground and by so doing prevents the breaking and dispersing of soil particles. Tree roots on the other hand while adding organic matter to the soil improve soil aeration and hold the soil mechanically. By so doing they militate against soil removal by wind or water action. When the vegetative cover from the Northern Range is removed indiscriminately, the effects of unwise removal are obvious. Eroded soil and landslides are ubiquitous after a slight downpour. The erodible soil reduces the water-carrying capacity of water courses and increases water dispersal. This is evident from our streams originating from the Northern Range and their deposits of silt on agricultural crops in the low lying areas of the Caroni plain. With accelerated erosion stream channels are quickly altered. The once swift flowing St. Joseph, San Juan, Arouca and Mausica rivers are now sluggish and muddy. Would you believe the historical fact that Sir Walter Raleigh sailed up the St. Joseph river? These river beds have been silted and many large bathing pools and fish habitats have been destroyed. Loss of top soil has created much barren and unproductive land in the northern range, particularly west of the Caura Sanatorium. In some places a virtual fire-climax type of vegetation consisting of bracken and grasses now exists. In some instances the damage seems irreparable.

The lush tropical rain forest which exists along the north coast adds to the landscape and overall aesthetics of the area. Removal of the

protective covering would destroy the scenery which blends with the coastal waters. Further to this is the effect of sheet and accelerated erosion which are likely to set in and which would result in water discolouration, silt deposition and eventually beach despoilment. The number of good beaches in Trinidad and Tobago and for that matter in the Caribbean are few and far between and it is in this light that the forest areas should be jealously and zealously protected.

Any form of land use therefore that preserves the forest cover on steep slopes and hydrographic areas is invaluable to the welfare and development of our country.

### EMPLOYMENT

Presently there are 110 monthly paid persons who are directly employed by Government and responsible for the management of our wildlife, Game Sanctuaries, Forests and Forest Reserves. This number is most inadequate to function effectively. The need to create new posts in these fields, also giving employment to guides and naturalists, is immediate. I refer in particular to the roles taken on by Messrs. Nanan and Ramsahal.

Timber from Forest Reserves generate much employment. For example, the stumpage value of one cubic foot of cedar in a Forest Reserve is 24 cents but when it reaches the consumer it costs approximately \$3.00, assuming one cubic foot makes six board feet at 50 cents per board foot. The difference of \$2.76 between stumpage and the price paid by the consumer represents the amount going out as wages to wood-cutters, bullmen, loaders, truckers, sawmill workers and sawmill owners.

### RECREATION AND AESTHETICS

With a spiralling population growth and a high population density (approx. 506 per sq. mile) and with this country's move towards industrialisation and mechanisation there are definite signs of our environment becoming too artificial, monotonous, polluted, noisy and restless. The effect of these on our people is manifest in the increasing number of suicides and in the growing complex of physical and mental ills. This is so because our environment plays an important part in the development of our whole well-being. Perhaps our many deficiency diseases are being caused by a deficiency of natural things around us and a regression from the simple and natural way of living to a push button way of life. Consequently more and more people are seeking the outdoors unconsciously or deliberately during their weekends and holidays to get respite from the heat, jostle, noise, excitement, traffic and tension and from the pavings and concrete surrounds which they must contend with daily. People hemmed in by the daily routine of city life need the change that comes from forest recreation. The forests provide escape from the pressures of modern life. A trip to nature helps to relax man and to restore him to his original self. It balances his way of life and enables him to return to his endeavours with renewed spirit, vitality and vigour.

In this respect many are the forms of relaxation and enjoyment — even though intangible — which our Forest Reserves and Game Sanctuaries provide to our people for easing their tensions and refreshing their minds and spirits. Some of these are hiking in the forest (Trinity Hills, El Tucuche), traversing nature trails, exploring and discovering



nature (Guacharo Caves), bathing and fishing in the cool clear forest streams (Oropouche, Matura, Quare Rivers), cooking and camping, birdwatching (Blanchisseuse), taking photography of nature and its awe-inspiring scenes (Hollis Dam, Blue Basin) simply admiring superlative sceneries (North Coast, Navet Dam) and natural settings (flight of Scarlet Ibis coming in to roost), drawing, painting and hunting (which is permitted only in Forest Reserve, but not in the sanctuaries).

But lands reserved for forest and game sanctuaries provide not only healthy outdoor recreation but also opportunities for developing important human faculties and capabilities. From biblical times man has sought the deep forest for its peace and quiet to meditate and to gain inspiration and enlightenment. Many a composer, artist, poet and writer has been inspired by nature's serenity, beauty and creation. Creative and intellectual work comes from deep meditation, which is difficult to do in a noisy and barren environment. The cultural and spiritual richness of our forest and game reserves lies in what they can do to our spirits and emotions.

### CONCLUSION

It may seem quite paradoxical to many that we should continue to reserve areas for forests and game, particularly at this stage of our development when our expanding population needs more land for living and growing food. But land reservation for our forests and game is as important to the welfare and development of our people as is food and clothing. These areas are responsible for our water as well as for our agriculture and therefore help to sustain us. Their preservation undoubtedly represents prudent and intelligent use of our natural resources.

Natural areas of scenic beauty help to nourish and inspire man. These are intangible and rightly so, but since man ought not to live by bread alone, then for a meaningful life reservation of these lands is a cultural necessity for the finer things of life, such as tranquillity, spiritual upliftment and rejuvenation of mind and body.

The siting of the Caura Sanatorium and Mt. St. Benedict in forecast environments have been deliberate. In these areas, the quiet, the tranquillity and the purified air which prevail are together a great boost towards uplifting and healing the mind and body.

Amongst the Caribbean Islands, Trinidad and Tobago is unique because of the many scenic and scientific areas which lie within our Game and Forest Reserves. Some of these are the Tamana Caves, the Oropouche Caves, the Caroni Game Sanctuary, the Mora Forests, the Maracas and Paria Waterfalls, Blue Basin, the Hollis and Navet Dams and the Mud Volcanoes. Failure to keep our Forest Reserves and Game Sanctuaries would indicate unreservedly a lack of appreciation of the rich gifts of nature with which this country is endowed. It would further reveal a myopic generation overpowered by materialistic values.

Nature destroyed is gone forever and cannot be created. Science has discovered and developed new resources but is yet to develop a substitute to replace adequately the beauty, wonder, joy and pleasure of nature. Our cultural growth, pride and development therefore is measurable by our management of our natural resources. To this end, the preservation of our present forest and Game Sanctuaries with a plan

to include samples of all our biotic communities is imperative. Finally, future generations may choose other courses for their management, but at least if we save these areas we shall not deprive those to come of the opportunity of making a choice.

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APPENDIX I.

FOREST RESERVES

Arena	.....	.....	.....	.....	3,797	Acres
Arima	.....	.....	.....	.....	1,830	, "
Blanchisseuse	.....	.....	.....	.....	2,150	, "
Brigand Hill	.....	.....	.....	.....	316	, "
Cap-de-Ville	.....	.....	.....	.....	5,207	, "
Caroni Swamp	.....	.....	.....	.....	7,900	, "
Cedros	.....	.....	.....	.....	3,348	, "
Central Range	.....	.....	.....	.....	41,722	, "
Ecclesville Windbelt	.....	.....	.....	.....	1,277	, "
Erin	.....	.....	.....	.....	5,237	, "
Freeport Mission	.....	.....	.....	.....	462	, "
Godineau Swamp	.....	.....	.....	.....	228	, "
Las Cuevas	.....	.....	.....	.....	569	, "
Longdenville	.....	.....	.....	.....	1,007	, "
Long Stretch	.....	.....	.....	.....	3,474	, "
Manzanilla Windbelt	.....	.....	.....	.....	5,351	, "
Matura	.....	.....	.....	.....	31,853	, "
McNair Ravine Sable	.....	.....	.....	.....	862	, "
Mayaro	.....	.....	.....	.....	7,135	, "
Melajo	.....	.....	.....	.....	5,350	, "
Morne L'Enfer	.....	.....	.....	.....	8,114	, "
Nariva Windbelt	.....	.....	.....	.....	6,267	, "
Northern Range	.....	.....	.....	.....	3,357	, "
Paria	.....	.....	.....	.....	1,782	, "
Rochard Douglas	.....	.....	.....	.....	4,735	, "
San Pedro	.....	.....	.....	.....	507	, "
Siparia	.....	.....	.....	.....	937	, "
Southern Watershed	.....	.....	.....	.....	24,357	, "
Tacarigua	.....	.....	.....	.....	1,749	, "
Tobago	.....	.....	.....	.....	9,776	, "
Todds Road North	.....	.....	.....	.....	463	, "
Todds Road South	.....	.....	.....	.....	208	, "
Tumpuna	.....	.....	.....	.....	5,336	, "
Valencia	.....	*	.....	.....	6,881	, "
Victoria Mayaro	.....	.....	.....	.....	131,640	, "
Yarra	.....	.....	.....	.....	1,578	, "
					<u>336,762</u>	, "

\* Game Sanctuary — see Appendix II.

APPENDIX II.

GAME SANCTUARIES

Northern Range	.....	.....	.....	2,314	Acres
Valencia	.....	.....	.....	*6,881	"
Central Range	.....	.....	.....	5,321	"
Trinity Hills	.....	.....	.....	16,020	"
Southern Watershed	.....	.....	.....	4,630	"
* Little Tobago	.....	.....	.....	258	"
* Saut d'Eau	.....	.....	.....	25½	"
* Soldado Rock	.....	.....	.....	1½	"
Caroni Swamp	.....	.....	.....	494	"
* Kronstadt Island	.....	.....	.....	12	"
Morne L'Enfer	.....	.....	.....	836	"
* St. Giles Island	.....	.....	.....	72	"
* Bush Bush	.....	.....	.....	3,840	"

\* Game Sanctuaries not within Forest Reserves.

APPENDIX III.

NATURE RESERVES

All except Blue Basin included in Forest Reserves.

Central Range	43½	Mt. Harris	50 Acres (approx.)
	327	Tamana	334 " "
Melajo	353	Melajo along Toco Main Road from South Boundary to 6 MM	290 Acres (approx.)
Rochard Douglas	52	North of Penal Rock Road between 1962 and 1963	Coupes 54 Acres (approx.)
Central Range	76	Along Tabaquite Rio Claro Road.	
Brickfield	64	Compartment 44	64 Acres (approx.)
Blue Basin	2	Acres.	