

World Heritage Sites

Protected Areas and World Heritage



MORNE TROIS PITONS NATIONAL PARK DOMINICA

Morne Trois Pitons National Park, named for its highest point, a 1,437m volcanic stub, includes large tracts of the most extensive undisturbed tropical forest in the Lesser Antilles and the headwaters of most of the major streams and rivers of southern Dominica. Its range of five volcanoes contains a rare combination of precipitous slopes and deeply incised valleys, the richest biodiversity in the Lesser Antilles with freshwater lakes, 50 fumaroles, hot springs, a boiling lake, and spectacular scenery.

COUNTRY

Dominica

NAME

Morne Trois Pitons National Park

NATURAL WORLD HERITAGE SITE

1997: Inscribed on the World Heritage List under Natural Criteria viii and x.

STATEMENT OF OUTSTANDING UNIVERSAL VALUE [pending]

The UNESCO World Heritage Committee issued the following statement at the time of inscription:

Justification for Inscription

The Committee inscribed the Morne Trois Pitons National Park on the basis of natural criteria (viii) and (x) for its diverse flora with endemic species of vascular plants, its volcanoes, rivers and waterfalls, illustrating ongoing geo-morphological processes with high scenic value.

IUCN MANAGEMENT CATEGORY

II National Park

BIOGEOGRAPHICAL PROVINCE

Lesser Antillean (8.41.13)

GEOGRAPHICAL LOCATION

Dominica is one of the three largest Windward Islands in the Caribbean Lesser Antilles. The Park is in its south-central highlands centred 9.5 km northeast of the town of Roseau between 15°16' to 15°23'N and 61°17' to 61°21'W.

DATES AND HISTORY OF ESTABLISHMENT

1952: First proposed as a forest reserve;

1975: Designated a National Park under the National Parks and Protected Areas Act No.16;

1980: 400 ha originally donated to the Nature Conservancy transferred to the Park.

LAND TENURE

The Commonwealth of Dominica, A few small private inholdings remain and certain rights-of-way have been granted to the Dominica Electric Utility Company (DOMLEC). Managed by the Forestry and Wildlife Division of the Ministry of Agriculture and Environment.

AREA

6,857 ha

ALTITUDE

125m-1,437m.

PHYSICAL FEATURES

Dominica in the Windward Islands is one of the most mountainous small islands in the Caribbean, part of the Antillean chain of submerged volcanoes where the Caribbean plate is subducted under the North and South Atlantic plates. The Park is 13.4 km long by an average of 5 km across and covers the southern end of the mountain backbone of the island. Morne Trois Pitons, the highest of five low mountains, is the three-peaked basaltic remnant of a volcano which rises over 1,400m within seven kilometres of the sea. The landscape is one of steep mountainsides, deeply incised valleys and glacial slopes formed in pyroclastic flow deposits. About 400,000-500,000 years ago, a line of dacitic-andesitic composite volcanoes was superimposed over low earlier shield volcanoes, and 30,000 years ago, the very large Roseau ignimbrite eruption occurred. Thereafter, large dome complexes, of which Morne Trois Pitons is the most spectacular example, formed, usually in the crater of a large volcano, the most recent being about 450 years old (Lang, n.d.). In the middle is the Valley of Desolation or Grand Soufriere, a large amphitheatre among the mountains of at least three separate craters where sulphurous fumaroles, steam vents, hot springs and mud pots bubble up through the ground. There is also a boiling lake, the world's second largest, surrounded by cliffs and almost always covered by clouds of steam. Its level and colour are highly variable, and its water, at about 95°C, often bubbles and churns, with steam emitting a dull roaring sound. It last erupted in 1880. The barren fumarole vegetation of sedges and scrub contrasts strongly with the luxuriant vegetation of the rest of the island.

Other outstanding features of the site include the Emerald Pool fed by the Middleham Falls, Stinking Hole, a lava tube in the middle of the forest; and the Freshwater and Boeri Lakes, separated by Morne Macaque (1,221m). The first is the larger in area and second deepest of Dominica's four freshwater lakes; Boeri Lake is the second largest and lies in the crater of an extinguished volcano. Their depths vary with the season. Both are thought to have originated about 25,000-30,000 years ago. The Park encompasses nearly all the headwaters of the streams and rivers of the southern half of the island, making it an essential resource for local water companies and the generation of hydroelectric power. There are three types of soil in the site: easily eroded allophanoid and kandoid clays derived from the underlying andesite, mainly differentiated by their degree of chemical weathering, and little developed protosols (Lang, 1967). Their permeability permits vegetation on slopes over 60°. The precipitous forested landscape is scenically spectacular.

CLIMATE

The climate is humid tropical marine with little seasonal or diurnal variation. The average temperature range is about 19 - 27°C from January to June, and 21°C - 28°C the rest of the year. The island is probably the wettest in the Caribbean owing to its topography and it sheds some 365 rivers. The annual rainfall increases from 1,200mm on the leeward side to over 10,000mm in the centre of the island, averaging 7,600mm in the site. The wet season at lower elevations is between July and December, the rainfall usually being short in duration but intense; February to June is distinctly drier. The relative humidity is very high at about 95 percent, rarely falling below 85 percent. For most of the year the prevailing northeasterly trade winds are moderate, averaging approximately 14.5 km per hour at levels below 445m (Environmental Coordinating Unit, 2000). Hurricanes occur in summer and fall.

VEGETATION

The island as a whole is still 60 to 75% covered with undisturbed forest which is the most extensive in the Lesser Antilles. It supports a high level of biodiversity which includes over 1,000 species of flowering plants with about sixty woody plant and tree species per hectare (Environmental Coordinating Unit, 2000). There is considerable microclimatic variability. Five natural vegetation zones exist within the area, plus a small patch of encroaching agricultural land in the far south. First: elfin/cloud forest, at the highest elevations above 930m, is almost constantly covered by mist and is subject to high winds, rain, and cold temperatures. Its main vegetation is of mosses, ferns, shrubs and stunted trees covered with lichens. The dominant species is *Clusia venosa*, with *Lobelia cirisifolia*. Second: montane thicket, which is transitional between elfin and montane forests, and is dominated by spindly trees, about 12-15m high with small canopies. The main tree found on the

steep slopes is *Podocarpus coriaceus*, the island's only native conifer. At high levels three endemic plants *Belseria petiolaris*, *Chromolaena impetiolaris* and *C. macrodon* and three new records *Elaphoglossum smithii*, *Spiranthes adnata* and *Pteris grandifolia* have been found. In flatter areas, the commonest tree is *Amanoa caribaea*. Third: montane rain forest, above 600m, which is frequently in cloud or fog. The species composition is similar to that of mature rain forest, but the trees are smaller. Non-vascular epiphytes cover most montane rain forest plants. Fourth: mature rain forest, which grows between 300-500m. This zone contains the most luxuriant growth, and is dominated by gommier *Dacryodes excelsa* with species of *Sloanea*. Understory species include *Licania ternatensis* and *Tapura antilliana* with numerous epiphytes and lianas. Fifth: secondary rain forest; vestigial old stands often remain, surrounded by smaller re-growth. Common species include *Cyathea* spp., *Miconia mirabilis*, *Cecropia schreberiana*, *Simarouba amara* and *Chimarrhis cymosa* (McKenzie, 1984).

FAUNA

Surveys of the site indicate at least 13 species of mammal, 50 birds, 12 reptiles and amphibians and 12 crustaceans. Apart from seven species of bats and the introduced black-eared opossum *Didelphys marsupialis* and agouti *Dasyprocta* spp. there are no terrestrial mammals beside feral cats, pigs and two species of rat. Birds include the locally iconic imperial amazon parrot *Amazona imperialis* (EN) and red-necked amazon parrot *A. arausiaca* (VU), both once common but now threatened. A reduced population of *A. imperialis* existed in the Morne Watt area before Hurricane David in 1979, but its existence in the Park is now uncertain, and red-necked amazon is now seen in only a few small areas. Other birds include broad-winged hawk *Buteo platypterus*, scaly-naped pigeon *Patagioenas squamosa*, the fairly abundant rufous-throated solitaire *Myadestes genibarbis*, hummingbirds and tremblers. Boa *Boa constrictor nebulosa* which grows to 3.6m in length is common in the Park. There are no poisonous snakes. Three species of lizards, including the endemic *Anolis oculatus*, exist in the Park along with several species of freshwater shrimps and crabs. The island's two native species of tree frogs, including the endemic *Eleutherodactylus amplinympha* (EN), also occur in the Park. There is a wide variety of moths and 55 species of butterflies (Environmental Coordinating Unit, 2000).

CONSERVATION VALUE

Morne Trois Pitons National Park includes large highly scenic tracts of the most extensive almost undisturbed tropical forest in the Lesser Antilles and the headwaters of most of the major streams and rivers in the southern half of the island. These support a high level of biodiversity. The Park lies within a Conservation International-designated Conservation Hotspot, a WWF/IUCN Centre of Plant Diversity and a BirdLife-designated Endemic Bird Area.

CULTURAL HERITAGE

Dominica became the last refuge of the very independent Island Caribs, who originally invaded from Guyana, but were put down and demonised by Spanish, French and British settlers. They were granted a reserve in the northeast by the British administrator in 1903. The preservation of the interior forests may be partly due to their fierce reputation for resisting settlements (Bell, 1903; Lee, 2000).

LOCAL HUMAN POPULATION

The Park is in the roadless interior of the island and there are only a few smallholder farmers using land near the southern boundary. Because the area contains in Freshwater Lake, the major source of electric power for the island and of fresh water for several southern communities, the government reserved certain water and power rights when the enabling Act of 1975 was conceived. Currently, DOMLEC rights-of-way and about two hectares of private inholdings are clustered near Freshwater Lake, a primary entry to the park. There is also a small quarry in the far north of the Park.

VISITORS AND VISITOR FACILITIES

Tourist numbers are increasing every year. Approximately 10,000-15,000 visitors a year walk to the Emerald Pool, and another 1,500-2,000m make the 6 km hike to the Boiling Lake from Laudat viage (J. Thorsell, pers. comm. 1997). Visitors can drive in at only two points: at Laudat on the road from Roseau, and the Emerald Pool site on the cross-island road between Roseau and Castle Bruce. A number of ancient trails or footpaths, cross the Park roughly east-west between mountains or north-south along ridges. Some of these were used in the recent past before roads to the east were completed in 1960 for access to Roseau and by hunters. They are now used for sightseeing such as to the Valley of Desolation, for trekking, cycling and riding. Canyoning and rappelling the cliffs are

available. Some picnic shelters, tables and washrooms have been constructed and brochures, booklets and leaflets about the Park have been produced. The Park's education program is facilitated through the Environmental Education Unit of the Forestry and Wildlife Division.

SCIENTIFIC RESEARCH AND FACILITIES

Scientific research in the Park includes biological studies distribution and abundance of the flora and fauna in the Freshwater Lake area; assessment of the environmental impact of ecotourism and recreation; measures of the flow rate of selected streams in the Freshwater/Boeri Lakes area; analysis of the past record of tropical cyclones; studies of natural regeneration of the flora; assessment of the impact of hurricanes on the vegetation; and evaluations of the presence of inert gases released by fumaroles in the Valley of Desolation. A university research and training facility is located at Springfield, not far from Brantridge Meteorological Station near the northwestern edge of the site.

MANAGEMENT

Morne Trois Pitons National Park was established from former government lands and a private donation of 400 ha from the former Middleham Estate, originally given to The Nature Conservancy by John Archbold. The Conservancy held the land in trust until 1980, when it transferred ownership to the Commonwealth. The agency responsible for the management of the National Park is the Forestry and Wildlife Division of the Ministry of Agriculture & the Environment. Non-governmental organizations with important supporting roles include the Dominica Conservation Association and Dominica's Electric Utility Company. In 1975, the first preliminary plan outlining management guidelines for the Park was prepared which granted rights to local water companies and the electricity company within the Park (J. Thorsell, 1975). In 1989, a ten-year management plan was written. Management guidelines were also included in the plan prepared by Scheele for the Organization of American States in 1991.

MANAGEMENT CONSTRAINTS

In 1990, Morne Trois Pitons National Park was classified as endangered by The Nature Conservancy because of the continued development of hydroelectricity and thermal energy. A hydroelectric project was built without adequate impact assessment or mitigation measures which resulted in temporarily increased soil erosion around Freshwater Lake and along the pipeline, deterioration of an access road, stream sedimentation, and possibly a major land-slide. Pipeline rights-of-way for one hydroelectric project have been transferred to DOMLEC, complicating decision-making in the Park. Increased tourism, the need for increasing monitoring and other programs are placing pressure on the limited staff and financial resources of the Forestry and Wildlife Division (The Nature Conservancy, 1995). Violent hurricanes regularly damage or destroy the old-growth forests. It is not known to what extent introduced mammal species may be disturbing the native fauna and flora.

STAFF

There was a total full time staff of three in 1997: Deputy director and two forest officers. Field supervision is part of the duties of local forest rangers. Some 20 casual labourers also work on trail and facility maintenance (J. Thorsell, pers. comm., 1997).

BUDGET

The Park was established with the help of the Canadian Nature Federation, with Parks Canada and funding from CIDA. Other projects have been funded by USAID, the European Development Fund, the European Union, the Organization of American States and The Nature Conservancy. An operational budget is provided but capital improvement projects have only been carried out with donor assistance (J. Thorsell, pers. comm., 1997).

LOCAL ADDRESS

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