

# Report on Diablotin Nest Search Activities in Dominica April 13<sup>th</sup> to 26<sup>th</sup>, 2016



**Ernst Rupp** - Grupo Jaragua, Dominican Republic

**Stephen Durand** - Forestry, Wildlife and National Parks Division, Dominica

**George Wallace**, American Bird Conservancy, USA

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## **Objectives**

- BCPE nest search on Dominica
- Training of Forestry staff in nest search procedures
- Exchange of experience and ideas between the Division of Forestry, Grupo Jaragua and ABC

## **Participants:**

Division of Forestry, Wildlife and National Parks:

Stephen Durand

Sheldon Simon

Martin Sorhaindo

Austin Winston

Machel Sulton

Josh Baron

Daniel Nicholson

Ulrick Dorival

Grupo Jaragua:

Ernst Rupp

Jairo Isaa Matos

Gerson Feliz

José Luis Castillo

Jerónimo Diaz Diaz

American Bird Conservancy

George Wallace

**Chronology** (see maps 1, 2, 3):

- April 13: Arrival in Dominica
- April 14: Short Reconnaissance of Morne Micotrin, Morne Trois Pitons and Morne Diablotin
- April 15: Press conference in the morning in the Department of Forestry and in the afternoon first ascent to Morne Trois Pitons along trail leading to the peak. Revision of area along trail in the upper mountain rain forest, montane thicket and lower elfin woodland
- April 16: First ascend to Morne Micotrin along trail to the peak. Revision of pristine elfin woodland close to peak and montane rain forest below
- April 17: Revision of southwestern flank of Morne Micotrin within montane rainforest and montane thicket
- April 18: Intend to enter valley between Morne Micotrin and Morne Trois Pitons failed because area was blocked by illegal agriculture. Continuation of search on southwestern flank of Morne Micotrin
- April 19: Revision of Northern flank of Morne Micotrin within elfin woodland
- April 20: Revision of area above landslide north of trail of Morne Trois Pitons within elfin woodland, montane thicket and montane rain forest
- April 21: Revision of area south of the trail of Morne Trois Pitons within montane rain forest and montane thicket
- April 22: Revision of area on western flank of Trois Pitons
- April 23: Ascend to ridge lying in the valley between Morne Trois Pitons and Morne Micotrin
- April 25: Interchange of information and data in the Forestry Department, BCPE research & monitoring equipment delivered on behalf of ABC to Director of Forestry
- April 26: Flight back to the Dominican Republic.

### **Criteria for revising potential nesting sites**

Since it was not clear where the nesting site(s) for BCPE were located within the huge potential area on Dominica, it was necessary - considering the limited time available for the team to do nest search – to concentrate on most likely sites. The following criteria were used to define these priority search areas:

#### **Radar data:**

Radar search by EPIC during January 2015 resulted in the following (1):

- During 20 radar surveys a total of 968 Black-capped Petrel (BCPE) like targets were detected.
- Sixty-three percent of these targets were detected among four locations, Morne Diablotin ( $n=205$  targets), Morne Trois Piton ( $n=106$  targets), Morne Micotrin ( $n=127$  targets), and Morne Anglais ( $n=168$  targets).

#### **Historic data:**

Dominica historically had substantial populations of Black-capped Petrels. Through the 19th century, the species was common enough that multiple peaks on the island were named for the petrel including Morne Diablotin and Morne aux Diables, but nesting birds have not been reported in the literature since the 1860's (2).

The capture of an exhausted adult female in the streets of Roseau was reported on May 2, 1932 (3)

Two different adult petrels were recently found in the Roseau Valley below Morne Micotrin, indicating the potential presence of a nesting population (7).

#### **Accessibility and logistics:**

Trails exist on Morne Diablotin, Morne Trois Pitons and Morne Micotrin, which make access to the peaks possible. The rest of the area is very difficult to penetrate. Therefore the trails are an important requisite to be able to reach higher elevations and do nest search.

Base camp was established in Roseau, which made it easier to reach Morne Trois Pitons and Morne Micotrin, and left Morne Diablotin at a certain distance.

Considering radar findings, historic data, accessibility of terrain and logistics, the decision was taken to work on Morne Trois Pitons and Morne Micotrin.

The following additional characteristics of the two areas mentioned were considered during the search:

**Elevation (ASL)**

The range of elevation of locations on Hispaniola, where nesting BCPE have been found, is between 4900ft (1500m) and 7500ft (2300m).

The elevations of the most important mountain peaks on Dominica are:

- Morne Diablotin with 4747ft (1447 m)
- Morne Trois Pitons with 4550ft (1387m)
- Morne Micotrin with 4006ft (1221m)

These peaks are below the range of nesting locations of Hispaniola. Historic records from Guadeloupe on the other hand document the nesting of the species in the 1800s on Soufriere Mountain “even as low” as Camp Jacob (~1600ft or ~500m) (5).

Wingate visited Dominica in 1961 and after examination of the terrain suggested that the original breeding population of BCPE may have occupied only a narrow zone at about 1 200 m elevation on leeward and 1 000 m on windward slopes of one or more of the higher peaks. According to him excessive rainfall and ground saturation might be a limiting factor for burrow construction at higher altitudes, and continuity of tall forest cover might be a limiting factor at lower altitudes (10).

**Climate:**

Trade winds come in from the east. Dominica's central mountain range forces high-level winds upwards. Moist air and heavy clouds are formed and begin to rise over the sea and east coast. Heaviest rain falls on the highest peaks. On reaching the west or leeward coast the air has lost most of its moisture, resulting in a dry “rain shadow” coastline (9). The effect of excessive rainfall on the peaks and the resulting ground saturation was already considered as a possible limiting factor for nesting of BCPE by Wingate during his visit in 1961.

**Vegetation:**

Altitude and climate regime create varied vegetation levels. Several vegetation zones which could play a role for BCPE nesting are considered (4):

**Elfin Woodland** grows at the highest elevation, above 3,000ft (900m), and is almost constantly covered by mist, subject to wind, high rainfall and cool temperatures. The vegetation is highly windswept and consists of mosses, ferns, shrubs like *Hibiscus tulipiflorus*, the Montane Palm *Prestoea montana* and stunted trees like Kaklen *Clusia mangle* and Aralie Montaigne *Didymopanax attentatum*.

**Montane Thicket** is transitional between elfin woodland and montane forests, dominated by spindly trees about 12-15m high with small canopies. Common trees found on steep slopes are Raisinier Montaigne *Podocarpus coriaceus*, the island's only native conifer and Bwa Rouge *Cyrilla racemosa*.

**Montane Rainforest** grows above 2,000ft (600 m), and is often in cloud cover or mist. Most trees here are also to be found in mature rain forest, though much reduced in stature. Many trees have aerial roots and are home to mosses, lichens, orchids and a variety of bromeliads. Common among the ground vegetation are ferns (*Pteridium sp.*) and razor grass (*Cyperus sp.*).

**Mature Rainforest** grows below 1,500ft (450m). This zone contains the most luxuriant growth, with trees averaging 100ft (30 m) in height. The massive tree trunks are often littered with bromeliads. Some are heavily buttressed. Dominant species are Gommier *Dacryodes excelsa* and Chatanye *Sloanea sp.* Due to the thick canopy, there is little ground vegetation other than patches of *Selaginella* fern.

**Secondary Rainforest** grows in areas once cultivated but are now abandoned, or in areas which have suffered landslides or other natural disasters. Most common here are tree ferns (*Cyathea spp.*), Cre cre *Miconia mirabilis*, Bwa Blan *Simarouba amara* and Bwa Riviere *Chimarrhis cymosa*. A less dense and often broken canopy permits shrubs and small plants to grow freely.

### **Topography:**

The landscape is characterized by volcanic mountain peaks with precipitous slopes, and deeply incised valleys. These valleys are ideal for BCPE flyways while the steep mountain slopes create easy access to possible nesting sites very similar to the slopes where nesting takes place on Hispaniola (Loma del Toro and Seguin).

### **Soil and Ground Conditions:**

Cracks, crevices and small caves in limestone rock form shelters and are used for nests by BCPE on Hispaniola. Dirt and soil within these cavities is removed by the birds. At some sites where natural openings in the ground are missing nests are dug within leaf litter, which on Hispaniola consists mostly of pine needles, or below fern trunks. For Dominica similar conditions were assumed, although in the geological sense with volcanic rock as basic material and without pine needles in the leaf litter.

### **Predators:**

The presence or non-presence of BCPE nests may also be dependent on predator presence having negative effects especially on chicks.

In Dominica the *Boa constrictor* is common and widely distributed occurring in a variety of habitats from dry scrub woodland, uncultivated woods and banana plantations, to tropical rain forest and montane forest at elevations of just under 4000ft (1250 m) (11).

The Opossum (*Didelphis marsupialis insulans*) is omnivorous and was introduced into Dominica by man possibly in the 1800 (8). The entire island seems to be suitable habitat. It is more abundant at intermediate and low elevations, i.e. 800 to 1,200ft (250 -375m) above sea level (11). Wingate assumes that potential sites for BCPE nesting should be above the reach of this species that, according to plantation owners he interviewed, does not occur much above 800 m (10).

The wild pig inhabits the forest and unpopulated thicket country throughout the north of Dominica, but seems to be more abundant around the foothills of Morne Diablotin. The wild pig normally resides on the mountain slopes (elevations of 2,000ft [600m] and above), because there the species encounters fewer people. Periodically, however, the animals come down the mountain slopes. They usually begin their movement towards the coast in October. Between early December and late January they are relatively close to the coast (elevations of 1,000ft [300m] or less). During the months of April and May they move back to the hills (11). Wingate assumes that potential sites for BCPE nesting are too steep to be reached by pigs. He states that pigs have roamed wild in the interior of Dominica for more than three centuries. He only found tracks of pigs on more level areas up to 3900ft (1200 m), but never on the near-vertical slopes (10).

The Black Rat (*Rattus rattus*) probably occurs throughout Dominica (10). On Hispaniola the species is present at all known nesting sites of BCPE, but up to date no direct impact has been documented. If the same holds true in Dominica has to be seen. Feral Cats are present on Dominica but are limited to areas where there are private agricultural holdings and communities from coastal zones to the rainforest, but their distribution does not extend beyond the rainforest (Durand: pers. communication).

Interestingly the mongoose does not appear on Dominica and therefore does not pose a threat to the BCPE. Legislation pertaining to wildlife in Dominica dates back more than a century, with the introduction of the Mongoose Ordinance in 1902. That law made the importation of the mongoose into the island a very serious offense (11). This piece of legislation, which demonstrated some excellent foresight by the administration of the day, has avoided a disaster that has occurred on many other Caribbean islands.

## Results

10 days of intensive nest search on Morne Micotrin and Morne Trois Pitons did not reveal any nests.

On Morne Micotrin ground conditions were very promising in the upper part, especially within the elfin woodland and montane thicket. Lots of cracks and crevices within the ground were found, although very often humid or even plain wet inside. The elfin woodland builds a thick vegetation cover, which would make movement of the birds on the ground very difficult except for areas with *Clusia mangle*. This species leaves below

its crown and branches open spaces where movement of the birds during and after landing as well as during take-off seems to be possible.

The area revised on Morne Micotrin can be seen on map 2. Although quite a bit of ground was covered on all flanks of the mountain, there is still a lot of area which has not been looked at and may well hold nests.

On Morne Trois Pitons we were able to revise areas along three trails (see map 3). The vegetation zones seem to be moved somewhat further up regarding elevation in comparison with Morne Micotrin and revision was executed mostly in montane rainforest and montane thicket, although a good part of elfin woodland was inspected along the trail which leads to the peak. In the areas covered by the team, ground conditions were less favorable than on Morne Micotrin. The soil consisted mostly of clay with little cracks and crevices. In many parts thick patches of razor grass and a native bamboo grass *Lasiacis divaricatum* made advancement difficult and unpleasant. Definitely the BCPE would not be able to access or leave a nest under these conditions.

The areas investigated on Morne Trois Pitons were on its western flank. Still a lot of other parts of this mountain need to be revised/investigated. Especially the eastern flank looks very promising with its steep slopes lying above a valley (situated between Morne Trois Pitons and Morne Micotrin), which may well serve as a flight path for BCPE giving direct access to the mentioned slopes. One major obstacle to achieving the revision of these areas is their most difficult access. No direct trails are available. A good strategy to advance and overcome this obstacle must be developed.

During the last day of our stay in Dominica Stephen Durand received information about historic BCPE harvesting in the southern part of the island., possibly in the area of Morne Toupie near the village of Petite Savanne (see map 1).

Due to time constraints it was not possible to further investigate the validity of the information and revise the pertaining area.

## **Recommendations**

1) Intensive ARU application from November to April of the 2016/2017 season.

A Skype meeting is planned for October with Stephen Durand, Hannah Nevins, Matthew McKown and Adam Brown to work out a strategy and define placements of ARU-s.

2) Intensive search on Morne Diablotin

3) Search Morne Watt, Morne Anglais, and Soufriere Ridge

4) Investigate report on former BCPE "harvesting" on Morne Toupie/Petite Savanne

5) Revision of eastern flank of Morne Trois Pitons



### Cited Literature

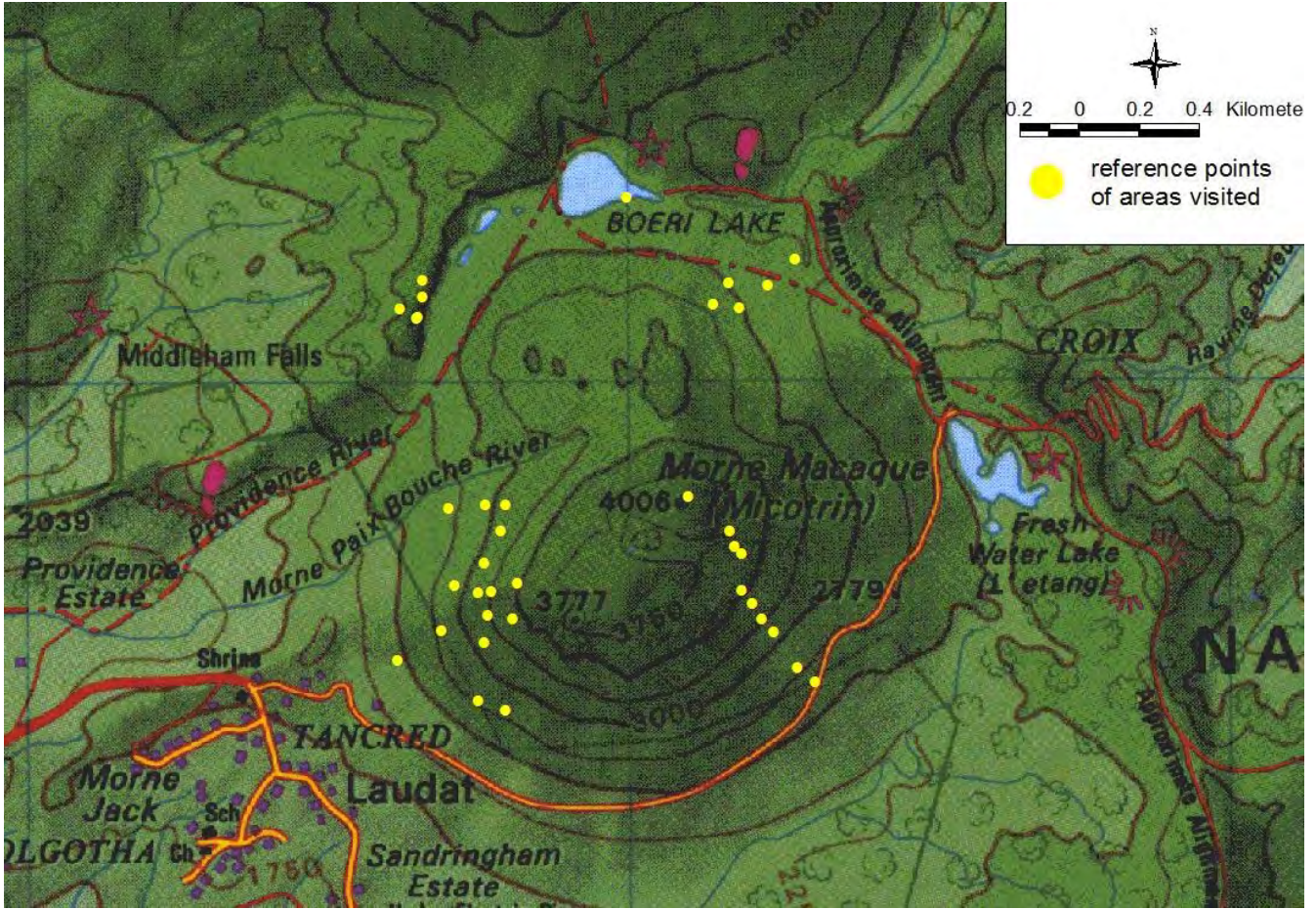
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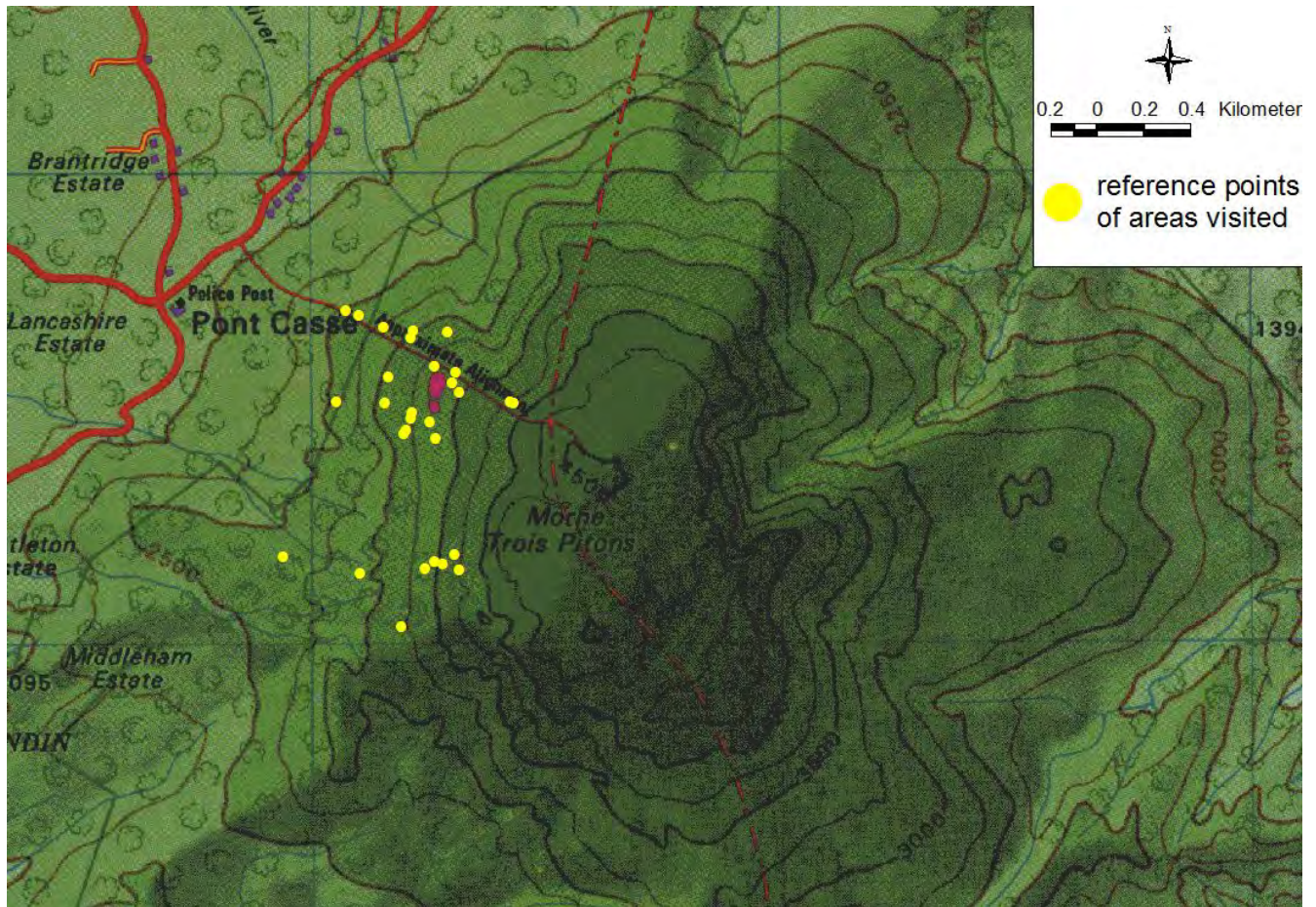
Map 1: General view of Dominica with possible relevant areas for BCPE nesting





Map 2: Areas visited on Morne Micotrin





Map 3: Areas visited on Morne Trois Pitons



Buttressed tree in mature rainforest





Small cave on Morne Micotrin



Montane Rain Forest with tree ferns





Peak of Morne Micotrin with elfin woodland



*Clusia mangle*, a major component of the elfin woodland





George and Stephen taking a break on Morne Micotrin





Mature Rain Forest



Bamboo thicket on Morne Trois Pitons



Pristine northwestern flank of Morne Micotrin in mist





Day 1- planning ahead of reconnaissance trips at Cophall, Roseau valley



Day 1 – view of western flanks of Morne Micotrin from Roseau valley road





Day 1 – view of south and southwestern sides of Morne Trois Pitons



Day 1 - Team planning and discussions continued near Laudat village ahead of reconnaissance of Morne Micotrin





Day 1 - Strategizing on selection of sites to conduct nest search - Freshwater Lake road



Day 1 - view of Northern side of Morne Micotrin from Boeri Lake road



Day 1- view of western side of Morne Trois Pitons from Sultan road



Day 1- southwestern side of Morne Trois Pitons from the Imperial road





Day 1 - Northwestern flank of Morne Diablotin

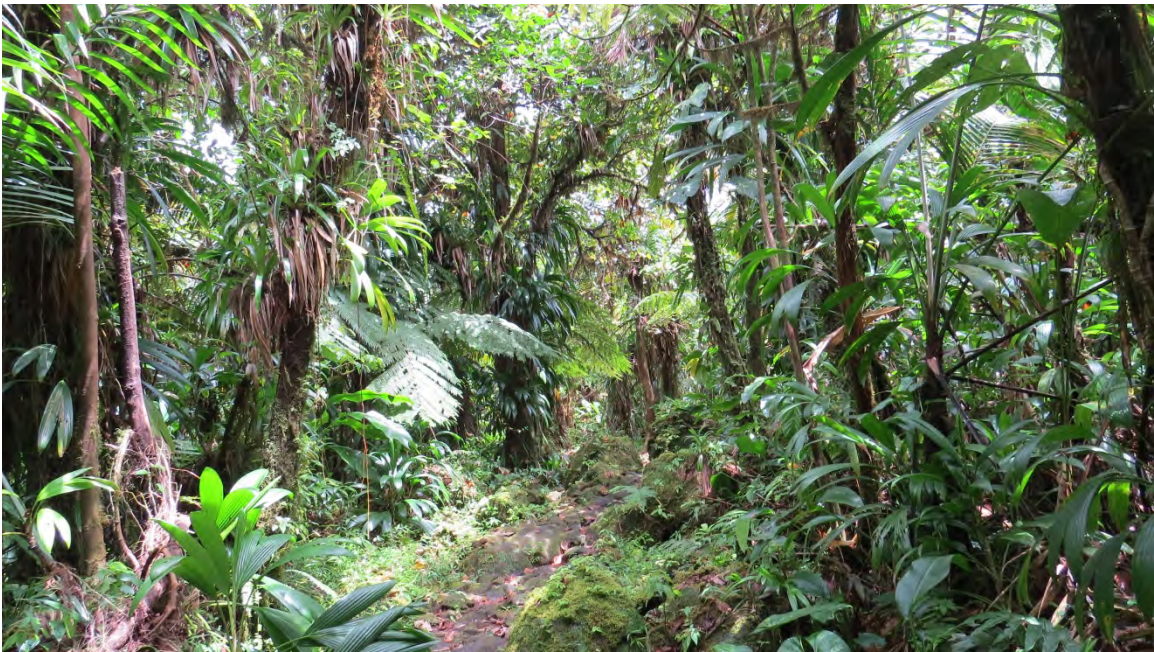


View of Morne Watt, Morne John and Morne Anglais from Micotrin





Searching a potential site with lots of caves on the northwestern side of Morne Micotrin cave within volcanic rock



Upper Montane forest – Boeri Lake trail





Summit – western flank of Morne Trois Pitons



BCPE nest search Team Rainforest – foothills of Morne Trois Pitons



View of the Atlantic coast from Morne Micotrin





George descending from Micotrin





Upper Montane forest – Micotrin



Forest floor with rocks and crevices – northwestern Micotrin





View of Leeward coast from Morne Trois Pitons



Final day in the misty Cloud Forest between Micotrin and Morne Trois Pitons



BCPE research & monitoring equipment delivered on behalf of ABC to Director of Forestry