



**ENVIRONMENTAL
PROTECTION IN
THE CARIBBEAN**



Black-capped Petrel Nest Monitoring in La Visite National Park, Haiti: 2023 Breeding Season



Report by

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Introduction

The Black-capped Petrel (*Pterodroma hasitata*) is a seabird that historically nested on many Caribbean islands (Dominica, Guadeloupe, and Hispaniola). The population of this species drastically declined during the early 20th century to the point it was believed extinct, until David Wingate confirmed with evidence the species still occurred in Haiti in the 1950's and the population was estimated at 4,000 to 25,000 birds.

In recent years, field research in Hispaniola confirmed the presence of breeding colonies in Massif de la Hotte, Massif de La Selle, Sierra de Bahoruco, and the Cordillera Central. While difficult to accurately estimate the population size of these colonies, most of the reports concluded populations of the Black-capped Petrel were severely declining.

To better estimate the Black-capped Petrel population size, a series of radar surveys was conducted from 2012 to 2017 and the data results determined the highest population of Black-capped Petrel (~1,900 pairs) in La Visite National Park, Haiti. The habitat of this park is under intense pressure due to deforestation, a result of agricultural expansion and the use of woods as the main source of energy for cooking. Additional threats to Black-capped Petrels included forest fires and tower collisions.

To better identify additional causes that drive the species population declining in Haiti, it was mandatory to get access to the species nest. It is in this context that we initiated a long-term nest search and monitoring effort in La Visite National Park (specifically on Tèt Opak). From 2018 to 2022 we monitored petrel nest activities, determining nest locations and nesting success.

The main threats we initially identified that caused nest failure included: the harvesting of tree ferns, the predation by exotic carnivores (rat, dog, cat and mongoose), animals grazing, and unsustainable agricultural practices. To mitigate the impact of these threats we proceeded to control the exotic carnivore population and create awareness through the communities living nearby the breeding colonies we are monitoring.

Our goals for the 2023 Black-capped Petrel nest season in La Visite National Park included (1) monitoring the previous known petrel nest cavities at the Tet Opak nest colony, (2) search for new petrel nests along the La Visite Escarpment adjacent to Tet Opak, and (3) reduce the number of predators by continuing to trap predators within the Tet Opak petrel nest colony.

Methods

Nest Monitoring

At the beginning of the breeding season (January 2023) we revisited the three known nest areas of Black-capped Petrels on the flanks of Tet Opak. Initially, we removed all objects that blocked the nest entrances to facilitate birds access to nest burrows.

Each nest (defined as a cavity or crevice with evidence of petrel activity including feathers, feces, egg, chick, or adult) detected was labeled with an aluminum tag identified with a unique number. Once a nest was located, we monitored it each month through August 2023, to record its

contents. Occasionally, when difficult to detect if a cavity had evidence of petrel use, we used a digital endoscope with a Smartphone as a monitor.

Additionally, we placed camera traps at the entrances of 15 nests to remotely record information. The camera traps we placed in the colony were preset on auto to capture images in hybrid mode (2 photos and a 10-second video) with a 10-second interval between captures, and allowed capture during all 24- hours each day. The image format was set on full screen while the video was calibrated to record 1280 x 720 image size. We download the camera images each month, to note the nest status and other relevant information. The camera model was BUSHNELL 24MP with 32-GB SD card. They were bought in 2020.

Nest Searching

Each month, we spent one day at an area along the La Visite Escarpment looking for new nest cavities.

Predator Trapping

To control the rat population, we deployed rat-focused snap traps each day throughout the nesting season (January – August) at the three known breeding areas within the Tet Opak breeding colony. Snap traps were checked each day to note the number of rats we captured.

A Tomahawk-style mammal cage trap, adapted for mongooses and cats, was set each day at the Tet Opak nest colony, but was moved to different locations throughout the nest season, within the nest colony. The walk-in trap was baited with sausage and fish.

Results

Nest Monitoring

During the 2023 Black-capped Petrel breeding season at the Tet Opak nest colony, we followed 55 nests. Of the 55 nests, 39 nests contained evidence of petrel activity (adult, chick, egg, feathers, feces, or smell of petrel). Of the 55 nests, 22 nests contained evidence of active nesting (adult, chick, or egg). Of the 22 active nests, 18 nests successfully fledged a chick while four nests failed prior to fledging. All four nests failed during the chick rearing phase. Of the four failed nesting efforts, two failed due to a dog depredating the chicks and two failed due to nest entrances being blocked by soil placed by humans during agricultural practices. Of the 55 nests monitored monthly, six nest cavities were destroyed due to agricultural encroachment and 13 were destroyed by presumed mammals digging up the nest cavity, however, as noted above, only four the destroyed cavities were active.

Nest Searches

No new Black-capped Petrel colonies were located during 2023.

Predator Trapping

To reduce rat populations in the Tet Opak nest colony, we set up 40 snap traps each day between January and July 2022. During this entire period, we captured 57 individual rats.

The Tomahawk style walk-in trap did not capture any animals.

The camera traps deployed at nests showed continuing evidence of mongoose in site #1 and a single identifiable dog in sites #1 and #2.

Other Observations of Note

In February, numerous fires were set in areas near the nesting area, but none burned into the colonies.

In March, an adult Black-capped Petrel was found on the ground near the site #3 nest colony. The petrel had been partially eaten by an unidentified mammal

Discussion

As in past season, the pre-season colony maintenance effort put into removing debris from the entrances of known petrel nests benefited petrels as it provided easier access to nests.

We encountered some clearing of areas within Sites #1 and #2 for agriculture. We observed tree removal and dirt moved. Our team spoke with the farmers and a request was made to leave the areas around the nest colonies undisturbed. The farmers agreed and the area was no longer cleared or used during our period of nest monitoring.

Regarding predators within the colony, we continue to observe evidence of rats, mongoose, and dogs on the colony. We have had success at trapping rats but no success in trapping other invasive predators. In future years, we believe this colony would benefit from finding a more successful way to trap mongoose and adding techniques focused on reducing dog numbers.

Regarding rat trapping, we trapped a similar number of rats as we had during 2022 (2022; n=54 and 2023; n=57). As we observed in previous years, the number of rats we trapped dropped off each month during the trapping period (February; n=20 rats, July; n=2 rats)

Regarding environmental education in this area, we visited two schools each month between January and August, *Ecole Nationale de Macary* and *Notre Dame D'Algrace de Seguin*. Topics included Black-capped Petrel conservation, bird migration, soil conservation, water cycle, and recycling.

We began a sustainable agriculture program this year, meeting with approximately 25 farmers each month between February and August. We provided input on soil conservation, water conservation, and forest/farm interface. This program culminated on a soil and water conservation project above Black-capped Petrel nest colony #1.

Regarding camera traps, of the 15 camera traps deployed, we had occasional malfunctioning of the units. In most cases, it appeared to be a problem of electronics within the units, with moisture a likely culprit. In some cases, the batteries died. We need to replace camera trap units that broke during the 2022 breeding season. This will allow us to purchase them in the United States and ship to Haiti prior to the nesting season.

This breeding season appeared to be very successful for Black-capped Petrels with a fledging rate of 81.8%, the second highest fledging success rate we have recorded since our monitoring program began in 2019, the highest recorded being 88.3% in 2020. Mammal trapping has been moderately successful. Rat has been the mammal most trapped. No other mammal species were trapped during 2023. Human conservation interventions were implemented for the first time in the La Visite area, during 2023. We visited schools and farmers monthly, with apparent success.

Recommendations

Research

- Continued Black-capped Petrel nest monitoring of the Tet Opak colony. Deploy camera traps at each nest and band adults and chicks.
- Expeditions to search the remaining areas along the La Visite Escarpment for nesting Black-capped Petrels.
- Expeditions to search for nesting Black-capped Petrels on and near Pic La Selle.

Conservation

- Mammal trapping in the nest colony areas prior to and during the nesting season by a mammal focused trapping team and providing them with appropriate trapping equipment.
- Work with family farmers that farm the areas above and below the Tet Opak nest colony to offset the human encroachment into this valley.
- Carry out a local youth environmental education program.
- Repair damaged nests and transition them to reinforced artificial burrows as is being done in the Dominican Republic.

Tables

TABLE 1. Sub-colony locations for the Black-capped Petrel nesting areas at Tet Opak in La Visite National Park.

Black-capped Petrel sub-colony Site	Latitude	Longitude	Altitude (meter)
Site-1	18.351463°	-72.236568°	2142
Site-2	18.350923°	-72.231261°	2142
Site-3	18.350900°	-72.231650°	2249

Images



Image 1. Bazil Jonel conducted nest monitoring at La Visite National Park, Haiti



Image 2. Adult Black-capped Petrel incubating egg at La Visite National Park, Haiti



Image 3. Burned area near Black-capped Petrel nest colony in La Visite National Park, Haiti



Image 4. Staff and farmers on soil conservation wall they built above Black-capped Petrel nest colony at La Visite National Park, Haiti