



Black-capped Petrel Nest Monitoring in La Visite National Park, Haiti: 2024 Breeding Season



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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' nests. 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 2024, 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 2024 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. Further, our team visited schools in the La Visite area as well as met and worked with local farmers to reduce erosion of the slopes within the nesting range of Black-capped Petrels along the La Visite escarpment.

Methods

Nest Monitoring

At the beginning of the breeding season (January 2024) we revisited the three known nest areas of Black-capped Petrels on the flanks of Tet Opak. Initially, as in past years, 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 present or past 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 2024, 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 seven 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.

Nest Searching

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

Predator Trapping

To control the rat population, we deployed rat-focused bucket traps each day throughout the nesting season (January – August) at the three known breeding areas within the Tet Opak breeding colony. Bucket traps were checked each day to note the number of rats we captured. (Images of bucket trap in photo section below)

Results

Nest Monitoring

During the 2024 Black-capped Petrel breeding season at the Tet Opak nest colony, we followed 55 nests. Of the 55 nests, 45 nests contained evidence of petrel activity (adult, chick, egg, feathers, feces, or smell of petrel). Of the 55 nests, 23 nests contained evidence of active nesting (adult, chick, or egg). Of the 23 active nests, 16 nests successfully fledged a chick while seven nests failed prior to fledging. All seven nests failed during the chick rearing phase. Of the seven failed nesting efforts, four failed due to an apparent carnivore depredating the chicks and three failed for unknown reasons, as the chicks were found dead in the nest cavities without evidence of cause of death. Of the total 55 nests monitored monthly, four nest cavities were altered due to agricultural encroachment however, two of those nests still successfully fledged chicks while the other two had no evidence of a nesting attempt.

Nest Searches

No new Black-capped Petrel colonies were located during 2024.

Predator Trapping

To reduce rat populations in the Tet Opak nest colony, we set up a bucket trap each day between January and July 2024. The bucket trap was moved daily. During this entire period, we captured zero individual rats.

The camera traps deployed at nests showed continuing evidence of rats at all three sites. There was no evidence of other carnivores with the camera traps but there was scat of dogs, cats, and mongoose observed at all three sites.

Other Observations of Note

In January, there were fires in the vicinity of the nesting areas but none in the nest sites themselves. Site Three had tree ferns removed during this month.

In February, there animals grazing in Site One but no other impacts on nesting grounds was observed. One school was visited this month (75 students). A group of farmers was met with this month and sustainable agriculture/soil erosion was discussed (20 farmers).

In March, Site One had both grazing animals as well as farming activities within in. One school was visited (75 students). A group of farmers was met with and erosion control was discussed (40 farmers).

In April, Site One had farming taking place and there was evidence of tree fern removal in this site. One school was visited (200 students). Farmers in site one created erosion control barriers (40 farmers).

In May, Site One had farming activities as well as tree fern removal. There was one meeting with farmers to discuss sustainable agriculture (40 farmers).

Discussion

Pre-season colony maintenance took place in all three nesting sites and included the removal of debris from the entrances of nest cavities. The enabled access to the nests for breeding pairs of petrels.

Site One had notable agricultural activity including farming, tree fern removal and grazing of animals. Our team worked with the farmers in the area to improve sustainable farming practices, specifically around erosion control as well as providing buffer areas around the nest colonies.

Regarding predators within the colony, we continue to observe evidence of rats, mongoose, and dogs on the colony. No predators were trapped this year, despite efforts.

Regarding environmental education in this area, we visited two schools each month between February 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 continued a sustainable agriculture program this year, meeting with approximately 40 farmers each month between February and August. This number was up from 25 farmers the previous year. 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 site one. This was also the site of erosion control activities in 2023.

This breeding season was successful for Black-capped Petrels with a fledging rate of 70%. This rate down from 81% in 2023. Mammal trapping had limited success this year and the team needs to find ways to get snap traps and tomahawk traps to Haiti, to replace that have broken over the past number of years. Human conservation interventions were implemented for the second year in the La Visite area. This included visiting schools and farmers monthly, with apparent success.

Recommendations

<u>Research</u>

- 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

<u>TABLE 1</u>. 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. Building a bucket trap to capture rats in the Black-capped Petrel colony in La Visite National Park, Haiti.



Image 2. Bazil Jonel conducted nest monitoring at La Visite National Park, Haiti



Image 3. Soil conservation wall built above Black-capped Petrel nest colony at La Visite National Park, Haiti



Image 4. Adult Black-capped Petrel incubating egg at La Visite National Park, Haiti