

**Results of Black-capped Petrel Nest Monitoring on Morne Vincent, Haiti:
2021 Breeding Season**



Report by:

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INTRODUCTION

The Black-capped Petrel, *Pterodroma hasitata*, is a seabird endemic to the Caribbean, proven to breed only on Hispaniola though believed extant in Dominica. This species, which spends its life at sea, returning to burrows hidden in the high mountains to breed, was long considered extinct due to forest clearing, introduction of exotic predators, and human harvest. Only in the 1960s did strong evidence emerge that the bird persisted, and the conservation community was galvanized when a chick in an active nest was finally discovered in 2011 on a mountain ridge in Haiti. Since then, the International Black-capped Petrel Conservation Group has created and implemented a Conservation Action Plan for the Black-capped Petrel (Goetz *et al.* 2012), to find, study, and secure the species while building the capacity to ensure its persistence.

The IUCN classifies the Black-capped Petrel as Endangered because it has a “small, fragmented and declining breeding range and population. It has already been extirpated from some sites, and declines are likely to continue because of habitat loss and degradation, hunting and invasive predators.” (Birdlife International 2018). The population is estimated as no more than 1,000 breeding pairs, perhaps as few as 500, and a total population of 2,000–4,000 birds. Petrel nests (burrows) have been in just four areas on Hispaniola (comprised of Haiti and Dominican Republic) thus far, though audio and radar evidence suggest other areas are possible (Brown 2017). The Conservation Action Plan does not give a quantitative goal for the species but has as a planning goal the reduction of its Red List classification from Endangered to Near Threatened.

The International Black-capped Petrel Conservation Group is working to prevent further declines in the petrel’s population and breeding habitat, maintain breeding sites, and addressing the highest threats to the species. Furthermore, they monitor petrel breeding colonies in multiple locations throughout Hispaniola. The Black-capped Petrel breeding colony at Morne Vincent in the Foret des Pins Forest Reserve. is the closest breeding site to the Haitian village of Boukan Chat, an activity center within the overall Black-capped Petrel conservation effort.

Herein, we report on the results of nest monitoring at the Morne Vincent Black-capped Petrel colony, during the 2021 breeding season.

METHODS

During the first visit of the season to the Morne Vincent colony in January 2021, we revisited each known petrel nest crevice from the previous breeding seasons, as well as searched for new nest crevices on the same slopes. Once a cavity was located and identified as a nest, we labeled the nest with a distinctive number on a metal tag and then recorded the nest information in a field notebook (nest status and GPS coordinates).

When searching for new nest cavities, we walked through the forested slopes looking for natural rock crevices or burrows dug into the hillside. Once a cavity was located, we inspected the nest entrance to see if it was free of spider webs and vegetation (a sign of activity in the burrow), looked for petrel feathers or bird feces at the entrance, as well as smelled the burrow to see if it smelled like fish (a sign that petrels were using the burrow). Finally, we used a digital endoscope

to inspect the inner part of the nest cavity for additional evidence of nest occupation such as an egg, petrel adult, or petrel chick. If a cavity was located, we labeled the nest with a distinctive number on a metal tag and then recorded the nest information in a field notebook (nest status and GPS coordinates).

We returned monthly, between January and July, to the Morne Vincent study site, inspected each current and historically known nest cavity, and recorded its contents and status/relative feathering status of chicks. When needed, we used an endoscope to determine the contents for the nest cavity.

Four camera traps were deployed to monitor nest activity between in-person nest checks. However, due to a fire in April, the camera traps were removed until June.

Trapping of rats with snap traps was completed monthly within the Morne Vincent nest colony from February through July 2021. Two to four days were spent each month deploying and checking traps. When a rat was found trapped, it was removed from the trap, identified as best as possible to species and sex, and removed from the colony.

RESULTS

Nest Monitoring:

We located and monitored three sub-colony areas on the slopes of Morne Vincent in the Foret des Pins Forest Reserve. The three sub-colonies are all on the north-facing slopes of Morne Vincent (FIGURE 1).

We located/re-located 14 active Black-capped Petrel nest cavities on Morne Vincent in 2021. An active nest is defined as a nest where an egg and/or a chick were observed in the current breeding season. Of the 14 active nests; 9 nests successfully had hatched eggs, and 6 nests had chicks successfully fledge (TABLE 1).

Of the eight failed nesting efforts, three nests had erosion that cause collapse and destruction of nest prior to egg hatching. Two nests appeared to be abandoned by adults as cold/dead eggs were observed in them throughout the monitoring period. Three nests failed during the chick rearing phase as the chicks disappeared while still downy feathered. The cause of disappearance was uncertain. Fledging success for the Morne Vincent Black-capped Petrel colony in 2021 was 0.428 (n=14).

Predator Trapping:

A total of 62 rat traps were deployed between January and July 2021. Traps were deployed between 2-4 days each month and total of 15 days were spent trapping. Over the 15 days, 62 traps were set, and 40 rats were trapped. The most rats were trapped in March (n=13; TABLE 2)

Additional Observation:

In April 2021, a large forest fire burned through the understory of Sites 2 and 3. Site 2 had no active nests at the time of the fire. There was one active nest at this time in Site 3, with a downy-feathered chick, and this chick survived the fire and successfully fledged in July 2021.

During May 2021, there was notable clearing of trees in an area adjacent to Site 3. No trees were observed to be removed in the Site 3 nest area. The one active nest in Site 3 successfully fledged a chick in July 2021.

Dog prints and dog scat was observed throughout Site 3 during the May 2021 nest check. The nest that was active in Site 3, successfully fledged a chick in July 2021.

DISCUSSION

Nesting success of the Black-capped Petrel on the slopes of Morne Vincent in 2021 (0.428; n=14 nests) was substantially lower than the previous ten-year mean for nesting success at Morne Vincent (mean=0.807; n=168 nests). The overall size of the known nesting area at this study site is relatively small compared to larger known nesting areas in the Sierra de Bahoruco to the east and Massif de La Selle to the west and therefore within the Morne Vincent colony, each nest failure causes a substantial decline in the overall rate of nesting success at this site.

The three nests that failed due to erosion and subsequent nest collapse were in a ravine area where heavy rains caused localized flooding/erosion, in turn the petrels using these nest sites abandoned the nests. We have observed nest failure in the past due to nest collapse within this colony, also due to heavy rains during the nesting period.

The cause of nest failure at the two nests that were abandoned prior to egg hatching as well as the three nests where the chicks disappeared prior to fledging, is unclear. There was no evidence of depredation at any of the five nests (tracks, scat, etc). However, a massive and unprecedented depredation event occurred at the nearby Loma del Toro petrel nest colony, when a pack of dogs depredated on numerous adult petrels and destroyed numerous nest cavities. There were dog tracks observed in the colony at Morne Vincent, but none near the failed nests. Due to the fire that came through the colony, camera traps were removed to protect them from fire damage, therefore, there were no camera traps at the failed nests and subsequently no evidence of cause of failure.

The large fire that swept through Morne Vincent, had no direct effect on petrel nest cavities. The one active nest located near the fire successfully fledged a chick. The indirect effects on the colony, however, are less clear. We have observed evidence in the past that fires near petrel nest areas attract flying petrels, that occasionally become disoriented and crash into the fires. The abandoned eggs and chicks that disappeared at Morne Vincent all occurred during the period during and immediately after the fire event. It's possible that the adults of the eggs/chicks died in the fire event, however, we have no direct evidence to support this.

Building on evidence among all Black-capped Petrel colonies on Hispaniola, that introduced mammals have a substantial impact on the nesting success of petrels, in 2021, we began trapping

of predators. We trapped 40 rats within the nesting colony and did not observe evidence of mammal predation on any of our known petrel nest cavities. We attempted to trap cats/mongoose/dogs with tomahawk-style live traps but had no success in trapping using this method. Our lack of success with these larger mammals is potentially due to limited effort at the sites, inappropriate bait used to attract animals, or ineffective deployment methods of the traps. In 2022, our team will continue to trap predators within the nest colony area.

Reducing the threat of Black-capped Petrel habitat removal on the slopes of Morne Vincent is a conservation priority for our team. We work to reduce this threat by engaging with farmers who work land around Morne Vincent. In one of the sub-colony areas, we observed removal of trees and bushes in an area adjacent to the petrel nests. This incursion into the nest area is a direct threat to the success of nesting petrels in this area. This is the first incursion into a petrel nesting area that we have witnessed in several years. Perhaps this is due to the effect that COVID-19 has had on the Haitian economy and in turn increased pressures on families to find additional income through enlarging family farms. With our initiatives to improve farming techniques which allow for larger crop yields, less soil erosion, and increased family incomes, we endeavor to reduce community farmers needs to remove forests as part of unsustainable farming practices. In 2022, we will work closely with the family farmers working near petrel nests areas to reduce their impact.

FUTURE RESEARCH AND CONSERVATION CONSIDERATIONS

Sustainable Agriculture: Continue engagement with and sponsoring of farm groups in the village of Boukan Chat. Continue to improve land use techniques that promote soil and water conservation as well as work towards increasing incomes in the community to reduce financial stress for families.

Mammal Trapping: Work towards reducing the number of mammals that are in the petrel nesting colony. This can be done through pre-season and in-season trapping or potentially fencing off the colony to keep predators out of the area.

Habitat and Colony Mapping: Create baseline mapping of all forested area in and around the petrel colony. Using aerial drones and ground methods. Map these areas annually to better understand human encroachment into forested areas.

Petrel Nest Monitoring: Monthly nest checks during the breeding season (February – July) to understand the long-term breeding success of the Black-capped Petrel as well as impacts our conservation actions are having on the nesting colony.

LITERATURE CITED

BirdLife International. 2018. Species factsheet: *Pterodroma hasitata*. Downloaded from <http://www.birdlife.org> on 2/11/2018.

Brown, A. 2017. Radar Surveys, Nest Monitoring and Conservation of the Black-capped Petrel on Hispaniola: February 2017. Environmental Protection in the Caribbean (EPIC). Green Cove Springs, Florida. Unpublished Report.

Goetz, J.E., J. H. Norris, and J.A. Wheeler. 2012. Conservation Action Plan for the Black-capped Petrel (*Pterodroma hasitata*). International Black-capped Petrel Conservation Group

Wheeler, J., Satgé, Y., Brown, A., Goetz, J., Keitt, B., Nevins, H. and Rupp, E. 2021. Black-capped Petrel Conservation Update and Action Plan. Conserving the Diablotin. International Black-capped Petrel Conservation Group.

<https://www.birdscaribbean.org/our-work/working-groups/black-capped-petrel-wg/>

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FIGURES AND TABLES

FIGURE 1. Map of Morne Vincent Black-capped Petrel nest colony in Haiti. The petrel colony is inside the red polygon. The Village of Boucan Chat is located north of the nesting colony.

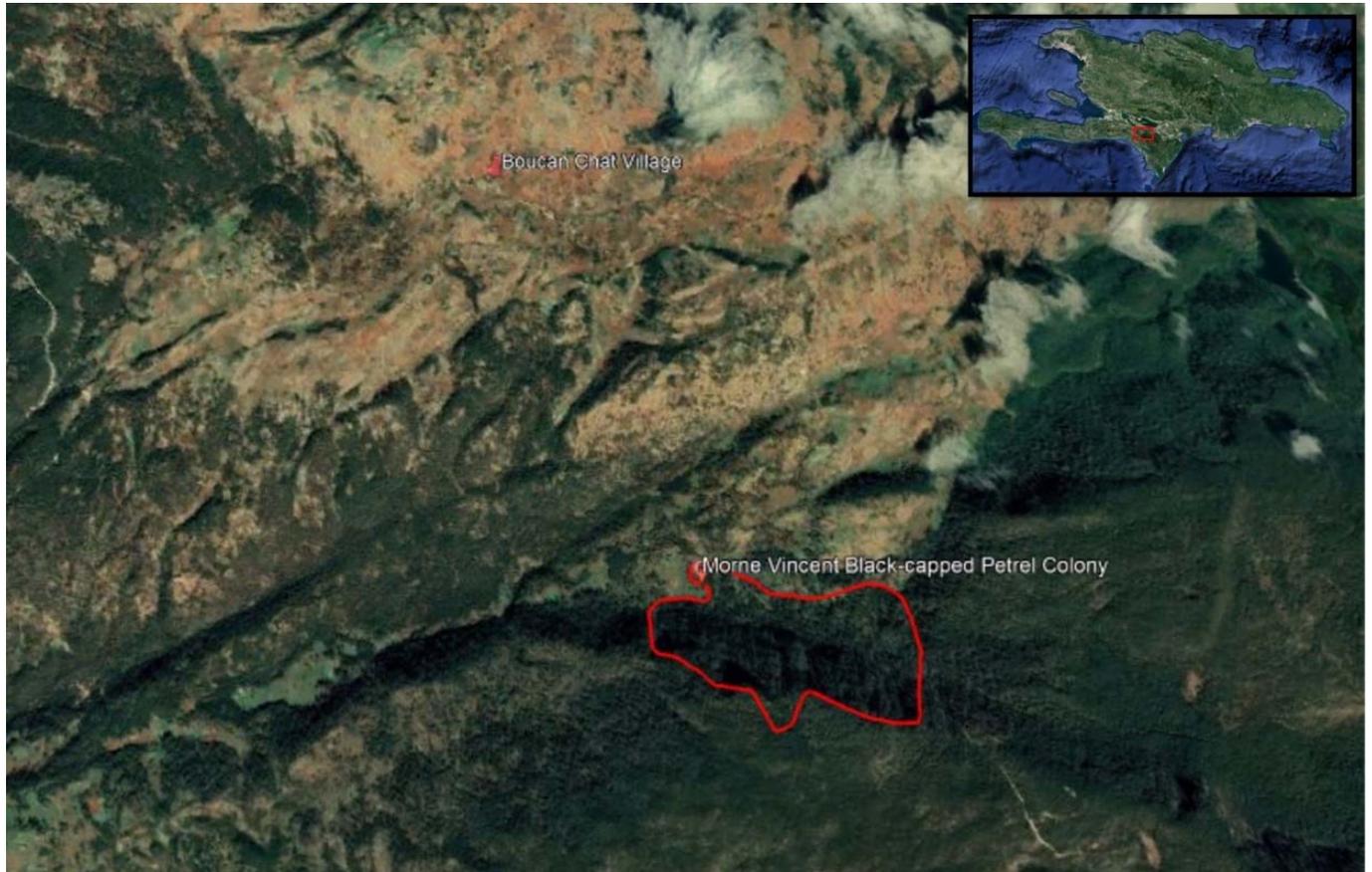


TABLE 1. Summary of nesting success from 2012-2021 at the Morne Vincent Black-capped Petrel nest colony in Haiti.

Year	Active Nests	Eggs Laid	Chicks Hatched	Chicks Fledged	Nesting Success	NOTES
2012	15	15	14	13	0.866	1 dead chick, 1 dead egg
2013 *	38	38	33	30	0.789	*Data includes both Morne Vincent and adjacent colony on Loma del Toro. 1 chick predation by mammal 1 chick collected by human 1 dead chick observed
2014	19	19	18	15	0.789	1 chick predation by mammal 1 egg predation by mammal 2 chicks collected by humans
2015	15	15	No Data	9	0.600	
2016	11	11	No Data	7	0.636	
2017	13	13	11	11	0.846	1 dead egg
2018	13	13	13	12	0.923	1 nest with eggshells but no chick seen
2019	14	14	13	13	0.928	1 dead egg
2020	15	15	13	13	0.866	1 nest with broken egg 1 nest with dead adult and dead chick
2021	14	14	9	6	0.428	3 nests destroyed by erosion 2 cold eggs 3 chicks disappeared prior to fledge

TABLE 2. Summary of predator trapping during 2021 at the Morne Vincent, Haiti Black-capped Petrel nesting colony.

Month	Rats Trapped	Cats Trapped	Dogs Trapped	Mongoose Trapped	NOTES
January	2	0	0	0	
February	9	0	0	0	
March	13	0	0	0	
April	4	0	0	0	
May	3	0	0	0	
June	3	0	0	0	
July	8	0	0	0	