Results of Black-capped Petrel Nest Monitoring on Morne Vincent, Haiti: 2020 Breeding Season

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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 2020 breeding season.

METHODS

During the first visit of the season to the Morne Vincent colony in April 2020, 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 a rock near the nest with a distinctive number and then recorded the nest information in a field notebook (nest status and GPS coordinates). Our initial visit to the Morne Vincent Black-capped Petrel colony was later than in previous years, due to the COVID-19 pandemic.

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 a rock near the nest with a distinctive number and then recorded the nest information in a field notebook (nest status and GPS coordinates).

We returned monthly, between April 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.

In past years, camera traps were deployed to monitor nest activity between in-person nest checks, however due to difficulties encountered during the COVID-19 pandemic, none were deployed in 2020.

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 15 active Black-capped Petrel nest cavities on Morne Vincent in 2020. An active nest is defined as a nest where an egg and/or a chick were observed in the current breeding season. Of the 15 active nests; 13 nests successfully had hatched eggs, and 13 nests where chicks fledged successfully (TABLE 1).

Of the two failed nesting efforts, one nest effort failed when erosion caused the nest cavity to be destroyed and the egg was observed to be broken. A second nest failed for unknown causes as a dead adult and a dead egg were observed in the nest cavity, with no known cause of death being observed. Fledging success for the Morne Vincent Black-capped Petrel colony in 2020 was 0.866 (n=15).

Additional Observation:
In addition to the petrel nests that were monitored, we also observed a dead adult as well as a dead fledgling Black-capped Petrel on the ground in the colony area. The nests from which they came was unknown.

A second chick, observed with downy feathering, was picked up by a Dominican Park guard from an area adjacent to the nesting colony. The reason it was picked up and the location of its acquisition are unclear. This chick was placed into a cavity near the house of the park guard and was found dead the following day.

Two recently fledged Black-capped Petrels were found in July, grounded near the village of Foret des Pins and brought to our team. One was given to our team and was successfully released from the village area. The second bird was not given to our team immediately as the person who found the bird wanted to be paid for providing the bird to our team. During the period of purchasing the bird from this person, the petrel died.

Notably, one nesting pair of Black-capped Petrels on the slopes of Morne Vincent shared a large nesting cavity with both a pair of nesting Barn Owls as well as a pair of nesting American Kestrels. All three species successfully fledged young.

DISCUSSION

In 2011, a team from Grupo Jaragua, a leading environmental foundation based in the Dominican Republic, located the first Black-capped Petrel nests on the slopes of Morne Vincent and has monitored the colony every year between 2011 and 2019. The global COVID-19 pandemic in 2020 limited Grupo Jaragua's ability to travel during the year therefore a team from Environmental Protection in the

Caribbean (EPIC) and Jeunes en Action pour la Sauvegarde de l'Ecologie en Haiti (JACSEH) took on the petrel colony monitoring duties. Team members Rene Jeune and Tinio Louis had surveyed the colony previously with Grupo Jaragua and were familiar with petrel nest locations. Furthermore, a farmer from Boukan Chat, Victor Renozier, provided field support to the team.

Nesting success of the Black-capped Petrel on the slopes of Morne Vincent in 2020 (0.866; n=15 nests) was slightly higher than the previous nine-years mean for nesting success at Morne Vincent (mean=0.804; n=153 nests). Furthermore, the nesting success of the Black-capped Petrel on Morne Vincent in 2020 is higher than that reported for other *Procellariiformes*; Galapagos Petrel, Kermadec Petrel, White-naped Petrel, Black-winged Petrel, and Cook's Petrel (Cruz-Delgado *et al.* 2010; Imber *et al.* 2003; Priddel *et al.* 2003). Perhaps the higher rates of nesting success are due to lower numbers of introduced predators compared to the islands where the other petrel's nest, although this has not been established. Perhaps its due to the slowing of habitat removal in the nesting colony, stabilized by our conservation efforts within the farming community.

For both nests that were unsuccessful in 2020, failure took place during the egg incubation phase. All eggs that hatched successfully fledged. In the past, nest failure has been attributed to either human collecting petrel chicks (n=3), introduced mammal depredation (n=3), and nest abandonment (n=4). In 2020, we attributed nest failure in one nest to a broken egg, as the egg broke when the nest cavity eroded away caused the egg to break. In a second nest that failed, we observed both a dead adult petrel and a dead egg in the cavity. We were unable to reach the bird and egg to study them for further clues as to the cause of death.

In previous years, camera traps were deployed at nests sites to augment the collection of data. These remote units allow for monitoring of activity in and around the petrel nests. In the past, these have collected critical data on petrel interactions with introduced predators, with humans, and with other petrels. Additionally, the camera traps have allowed us to witness petrel behavior including mate switching and chick wing flapping behavior. In 2020, due to the pandemic, our team was unable to get camera traps in the country and therefore none were deployed. We intend to deploy camera traps in future years.

While remote sensing of introduced predators did not take place this monitoring effort due to the non-deployment of camera traps, our team recorded incidental visual sightings of both cats and rats in the colony during their monitoring visits. This presence of introduced predators provides further evidence of likely interactions between mammals and petrels at the Morne Vincent nesting colony. With our sightings in 2020, previous sightings of introduced mammals recorded on camera traps in the colony, as well as evidence in the past of mammals preying on petrels, we suggest the trapping of mammals prior to and during the breeding season, to reduce this threat to petrel nesting success.

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. 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 2020, due to COVID-19 travel restrictions and a team health priority of limiting contact with rural families, we did not survey forested areas to measure forest cover. We intend to map forest cover and Black-capped Petrel habitat as part of our greater Black-capped Petrel conservation initiatives in future years.

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 28/11/2018.

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.

Cruz-Delgado, F., González, J. A. and Wiedenfeld, D. A. 2010. Breeding biology of the critically endangered Galapagos Petrel (*Pterodroma phaeopygia)* on San Cristobal Island: conservation and management implications. Bird Conserv. Internatn. 20: 306–319.

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

Imber, M. J., West, J. A. and Cooper, W. J. 2003. Cook's Petrel (*Pterodroma cookii*): historic distribution, breeding biology and effects of predators. Notornis 50: 221–230.

Priddel, D., Hutton, I., Carlile, N. and Bester, A. 2003. Little Shearwaters, (*Puffinus assimilis assimilis)*, breeding on Lord Howe Island. Emu 103: 67–70.

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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 Boukan Chat is located north of the nesting colony.

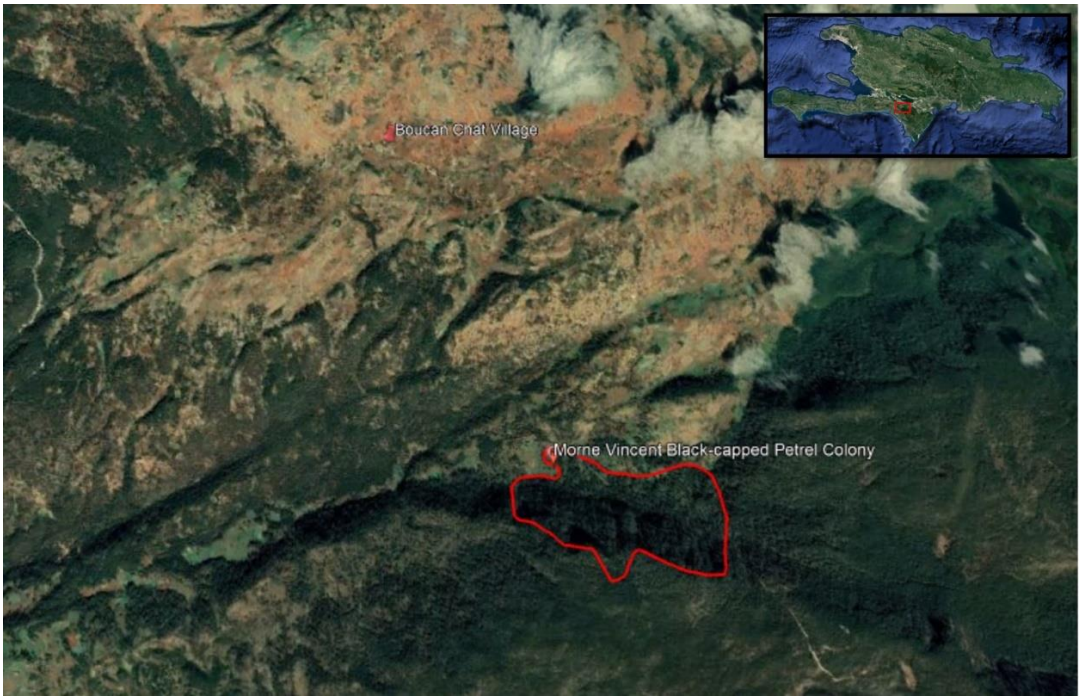

TABLE 1. Summary of nesting success from 2012-2020 at the Morne Vincent Black-capped Petrel nest colony in Haiti.

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