

of March and April, 2024, a field team remained in the area continuously, attempting to check each trap every third day, opening closed trap doors and replacing bait. Tomahawk trap use was discontinued in May.

Results:

Three mongooses were caught during the 2023-2024 breeding season, one in January and two in March. The mongoose caught in January managed to escape, forcing its way out of the trap through the small opening on the side of the closed trap door. In the previous 2022-2023 breeding season, ten mongooses were trapped. It may be speculated that a season of trapping reduced the population of mongooses in the area, lowering trapping success in 2023-2024.

Weather conditions during March and April 2024 were characterized by nearly daily heavy rainfall. Team members were continuously present at the nearby park ranger station, but they could not maintain the planned schedule of visits to nests. In April in particular, only a few visits were made. The steep and slippery terrain of the Valle Nuevo nest site is too dangerous to navigate in extremely wet weather. This was unfortunate, as camera trap data throughout the trapping period document the presence of mongooses desperately trying to access the bait in closed traps. Certainly a higher number of mongooses would have been caught if traps could have been opened.

During the previous two seasons of trapping with Tomahawk traps in Valle Nuevo, no collateral damage to non-target species was documented. During the 2023-2024 season, two petrels that were investigating traps got caught inside, one in January and the other one in February. Both birds died, likely due to stress. It is extremely important to avoid further tragedies of the same kind, so use of Tomahawk traps in the vicinity of nests will be discontinued.

The trapping activities of 2023-2024 did not result in complete mongoose removal. Camera traps images showed the presence of mongooses in May (see the camera trapping analysis appended to this report).

No direct mongoose attacks were documented by cameras during the season, yet the remains of five dead petrels in and around nests point to mongoose impact. These depredated remains were found in and around nests, and mongooses are the most likely predators given documented past attacks and frequency of occurrence of mongoose on camera traps.

The five new AT220 traps provided by American Bird Conservancy should resolve the major challenges encountered with Tomahawk Traps. The AT220 is an automatic self-resetting trap, so can function repeatedly, and does not need to be re-opened. Also, a protocol will be followed to test and minimize the likelihood of petrels approaching the traps. This should be minimized, although it seems very unlikely petrels would be harmed by traps, given their anatomy.

1.b. Predator Control at Loma del Toro

- i) Keep dogs out of the colony, and control feral cats and mongoose.
- ii) Maintain nests dog-proof by securing entrances and burrows
- iii) Monitor and evaluate artificial burrows as a proof-of-concept effort for protecting nesting birds from attacks by dogs or other nest excavating predators.

Methods:

Nest at Loma del Toro were visited by a field team approximately every two months at the beginning and during the 2023-2024 nesting season. At the beginning of the season, where necessary, burrow entrances were reinforced with rocks or wood to ensure that dogs would not be able to excavate them. One cracked wooden tunnel was replaced. Nests were examined visually on visits, and almost all nests were monitored with camera traps throughout the season. Three of the camera traps were set to transmit photos directly to cell phones; these were selected based on strength of cell signal. Two of these three functioned successfully throughout the season.

Results:

Wooden nest boxes have been placed at six Loma del Toro burrows damaged or destroyed by dogs in 2020-2021. These replacement burrows have now been monitored during three seasons: 2021-2022, 2022-2023, and 2023-2024. Table 1 presents petrel activity at the six replacement nests, before and after the dog attacks. Table 1 also includes information on the one artificial burrow (Box 3, a nest box placed in a novel location) selected for nest use by petrels.

Five of the six replacement nests seem to have been used somewhat by petrels across three seasons. During the 2021-2022 season, none produced a fledgling chick. During 2022-2023, two artificial burrows with nest boxes (TRO8 and TRO17) did show chicks practicing their wings. A successful final take-off of the two birds (fledging) is assumed in the absence of any signs of failure. Season 2023-2024 ended with fledging out of two replacement burrows (TRO9 and TRO15).

In June 2024, in-person inspection revealed a chick in TRO8. This chick appeared behind in the typical phenology for Loma del Toro. In June, chicks in the Loma del Toro colony are usually far along in their flight plumage; this chick was still wrapped up in down feathers. Camera trap images show that this chick left its shelter during daytime (July 27, 7:53 am) still wearing mainly down plumage. The remains of a seemingly unharmed dead chick near the nest entrance were found by the team on its last visit to Loma del Toro in August. This chick was not considered predated.

Although not all replacement burrows produced chicks, success rate for this subset is similar to that seen for the natural nests in the Loma del Toro colony.

The camera trap analysis appended to this report provides data on predator activity at the Loma del Toro colony. In short, several nests were visited by dogs but there was no evidence of direct attack or damage caused by dogs. There were no emergency deployments triggered by images sent by cell phone (the two relevant nests were not active). Cats occurred in Loma del Toro occasionally, but they seemed not to investigate nests. Rats continue to appear in images from almost all cameras. The remains of one apparently predated chick were found just outside a nest entrance; unfortunately, the camera on that nest malfunctioned and the predator is unknown.

Table 1: Replacement Burrows (Nests Fitted with Nest Boxes) at Loma del Toro

Nest	Changes made after dog attack	Results 23/24	Results 22/23	Results 21/22	Results 20/21	Results 19/20	Results 18/19
JGP02	box with tunnel installed inside nest	inactive	inactive	last photo adult 31 Oct 21	dogs	fledged	fledged
TRO02	box installed inside destroyed nest	inactive	last photo adult 18 Nov 22	last photo adult 14 Dec 21	dogs	fledged	fledged
TRO08	box placed inside nest	chick found dead	chick fledged 7 Jul 23	last photo adult 21 Apr 22	dogs	abandonend during season	fledged
TRO09	box placed inside nest	fledged	last photo adult 18 April 23	last photo adult 24 Mar 22	dogs	abandonend during season	fledged
TRO15	box with tunnel installed inside nest	last photo adult 11 April 24	last photo adult 21 Mar 23	last photo adult 2 Apr 22	dogs	fledged	fledged
TRO17	box placed inside nest	fledged	chick fledged 6 Jul 23	last photo adult 14 Mar 22	dogs	abandonend during season	egg outside nest
ca3	box placed at new location	last photo adult 17 March 24	adult presence until March/April	n/a	n/a	n/a	n/a

1.c. Track the fate of as many nests as possible

Methods:

The field team visually inspected every known nest at least once during the 2023-2024 breeding season. A total of 95 cameras were available to monitor nests, artificial burrows, and traps:

- 32 cameras were installed at Valle Nuevo including 9 cameras focused on Tomahawk traps. Two of these cameras were placed at nests discovered during the breeding season. It was not possible to install cameras at every Valle Nuevo nest due to the very steep terrain conditions.
- 40 cameras were installed at Loma del Toro, covering most but not all nests. This included cameras at 17 artificial burrows (nest boxes placed in novel locations) and one placed at a nest discovered during the breeding season.
- 8 cameras were installed at Loma Quemada. Two of these cameras were placed at nests discovered during the breeding season.
- 15 cameras were handed over to the Haitian team, who installed them at nests of Morne Vincent in October 2023.

Results:

Table 2 shows the fate of monitored nests at Valle Nuevo, Loma del Toro and Loma Quemada during the 2023-2024 season. The total of nests monitored (with camera and/or visually) was 30 at Valle Nuevo, 26 at Loma del Toro, and nine at Loma Quemada. The number of active nests (showing presence of petrels during the season) was 25 at Valle Nuevo, 20 at Loma del Toro and eight at Loma Quemada. Successful fledging was documented at two nests at Valle Nuevo, nine at Loma del Toro, and two at Loma Quemada, which amounts to fledging successes of 8%, 45%, and 25%, respectively.

Table 2: Monitoring results for Valle Nuevo, Loma del Toro y Loma Quemada

Nest Results 2023-2024	Valle Nuevo	Loma del Toro	Loma Quemada
inactive	5	6	1
presence of adults but no chicks	18	9	4
predator impact	5	1	1
fledged	2	9	2
dead unharmed chick	0	1	1
infertile egg or abandoned egg	0	0	0
Total monitored	30	26	9
active	25	20	8
% fledging to active nest	8	45	25

Note: There is a camera trap analysis appended to this report which provides more detailed discussion of camera data. The fledging success values reported there are based on a subset of nests monitored by camera.

As shown in Table 3, fledging success in Valle Nuevo has been very low over the years, including the 2023-2024 season. It is notable that 18 nests were occupied by adults and failed to produce a fledgling, without any evidence of predation or disturbance. Perhaps predation occurred but was not detected? Or perhaps adults abandoned their nests for other reasons?

A high level of abandonment occurred at the Loma del Toro colony after the 2020-2021 season, which was characterized by the dog disaster that resulted in several predated petrels and destroyed nests. During the 2023-2024 season, the Loma del Toro had a reduced level of abandonment and a significant increase in successful fledging. From three successful nests in 2022-2023, the number jumped up to nine fledglings in 2023-2024 season. The calculated fledging success of 45% is lower than the rates documented before the dog disaster (~80%), but it is hoped that the protective measures against dogs at Loma del Toro will continue to bring the fledging rate up.

Numbers on fledging and corresponding percentages of fledging success have been mixed at the Loma Quemada colony. It appears that seasons of high fledging percentage are followed by seasons of lower percentages. There has been little evidence of predation in the Loma Quemada colony, although wild pigs, cats and high numbers of rats have been documented. Two dead chicks were found at Loma Quemada in 2023-2024; both were inside nests, one intact, the other apparently predated.

Table 3: Annual nesting success at the three colonies in the Dominican Republic

season	Valle Nuevo			Loma del Toro			Loma Quemada		
	active nests monitored	successful nests	percentage of success (%)	active nests monitored	successful nests	percentage of success (%)	active nests monitored	successful nests	percentage of success (%)
2020-2021	5	2	40	29	2	7	6	4	67
2021-2022	18	2	11	24	4	17	6	1	17
2022-2023	23	3	13	21	3	14	6	5	83
2023-2024	25	2	8	20	9	45	8	2	25

2. Find new nests at suspected sites in the Dominican Republic

Methods:

Nest searches were conducted within and around the colonies at Loma del Toro, Loma Quemada, and Valle Nuevo. The technique to find nests was the same as previous years: careful examination on foot, noting any odor, feathers or excrement. A total of 11 new nests were found: eight at Valle Nuevo (all in March 2024), one at Loma del Toro (February 2024) and two at Loma Quemada (June and July 2024) (see Table 4).

All new nests were monitored; where it was possible, a camera was installed. At Valle Nuevo, cameras could be installed at only two of the recently-discovered nests. The other six nests occur in extremely steep areas where the installation of camera is not feasible.

Results:

Though there was evidence of chicks in some of the newly-discovered nests, none seems to have produced a successful fledgling.

Table 4: Nests discovered during 2023-2024 season

Site	Nest	Longitude (E)	Latitude (N)	Details
Valle Nuevo	vn32	331182	2061751	Found in March with strong odor, camera installed, no birds seen on photos, no signs of chick
Valle Nuevo	vn33	331179	2061758	Found in March with strong odor and fresh feces, camera installed, last photo of an adult 5 March 2024, no signs of chick
Valle Nuevo	vn34	331276	2061933	Found in March, feathers of predated chick inside nest
Valle Nuevo	vn35	331278	2061931	Found in March with strong odor and some small feathers, no camera installed, no signs of chick
Valle Nuevo	vn36	331175	2061822	Found in March with adult inside, no camera installed, no signs of chick
Valle Nuevo	vn37	331175	2061833	Found in March with strong odor, no camera installed, no signs of chick
Valle Nuevo	vn38			Numbered, but not confirmed as nest
Valle Nuevo	vn39	331281	2061737	Found in March with strong odor, no camera installed, no signs of chick
Valle Nuevo	vn40	331265	2061936	Found in March with strong odor and lots of small feathers inside nest tunnel, no camera installed, no signs of chick
Loma del Toro	Tro20	213327	2024101	Found in February, camera installed, last photo of adult 29 March 2024, no sign of chick
Loma Quemada	PRM8	234965	2011750	Found in June, camera malfunctioned, no signs of chick
Loma Quemada	PRM9	235002	2011740	Found in July with intact dead chick inside, no sign of depredation

3. Restoration

3. a./b. Continue to build and monitor artificial burrows at Loma del Toro

Methods:

Five nest boxes and entrance tunnels were built from wood for deployment in the 2024-2025 season. Three sets were installed at Loma del Toro in October 2024 and two more planned by end of year. These artificial burrows are placed in locations not before used by petrels and selected based on proximity to known nests and the feasibility of placement (where steepness and substrate allows for digging).

Due to the complex border situation between Haiti and the Dominican Republic, it was not possible to transfer boxes into Haiti for use at Morne Vincent during the 2024-2025 season.



Preparing boxes



Finished boxes



Boxes at Loma del Toro to go



Installation of box into the ground



An artificial burrow ready

Results:

A total of 20 artificial burrows (nest boxes with or without tunnels) have now been constructed at Loma del Toro since March 2021 (See Table 5). All artificial burrows are being monitored by cameras.

Box 3 has shown the greatest amount of petrel activity. In the 2022-2023 season, this box was briefly occupied in March and April 2023. It was occupied again in November 2023 until March 2024. We are hopeful this box will continue to attract breeding petrels.

Physical examination reveals that the boxes and tunnels are standing up against the elements. Moisture would seem to be the greatest challenge, yet none of the wood appears damaged. Only one tunnel required a repair due to cracking. Ultimately, we should look to concrete for construction because surely wood cannot retain its integrity in the ground indefinitely.

Table 5: Artificial burrows installed at Loma del Toro

Box	Actual camera	Coordinates		Location comments	Installation Date	Tunnel?	Results 2023-2024	Results 2022-2023
		E NAD27	N NAD27					
1	c46	213347	2024083	trail to nest tro11	16-Mar-2022	without tunnel		
2	c36	213346	2024083	trail to nest tro11	16-Mar-2022	without tunnel	bird seen passing	
3	c59	213323	2024094	close to nest tro12	12-May-2022	broken tunnel replaced	Active nest, last photo adult 17.3.24	Active nest, adult bird present until March/April
4	cn04	213315	2024100	left side of nest tro12	12-May-2022	with tunnel	bird seen passing	
5	cn10	213323	2024123	below tro17	16-Mar-2022	with tunnel	bird seen passing	bird seen passing
6	c79	213379	2024160	beside tro18	17-Mar-2022	with tunnel		bird seen passing
7	cn03	213373	2024160	above tro18	17-Mar-2022	with tunnel		bird seen passing
8	cn17	213017	2024283	right side of nest nv1	2-Feb-2022	with tunnel		
9	c33	212984	2024295	below nest nv1	2-Feb-2022	with tunnel		
10	cn14	212993	2024264	part above nv1	2-Feb-2022	with tunnel		
11	cn15	213018	2024248	above nest nv1	3-Feb-2022	with tunnel		
<i>Tunnel 1</i>	<i>no camera</i>	<i>213014</i>	<i>2024374</i>	<i>below nest nv1</i>	<i>3-Feb-2022</i>	<i>tunnel fitted to existing orifice</i>		
12	c81	213360	2024089	30 m above nest tro6	18-Oct-2023	with tunnel	adult bird inspecting box for about 20 minutes	
13	c54	213350	2024108	15 m below nest tro19	18-Oct-2023	with tunnel	bird seen passing	
14	c45	213317	2024107	between tro17 & tro5	18-Oct-2023	with tunnel	bird seen passing	
15	c59	213363	2024162	below box 8	19-Oct-2023	with tunnel	bird seen passing	
16	c49	213362	2024167	below box 8	19-Oct-2023	with tunnel		
17	cn01	213361	2024173	below box 8	19-Oct-2023	with tunnel		
18	cn20	213367	2024089	above box 12	23-Oct-2024	with tunnel		
19	T8	213367	2024092	above box 12	23-Oct-2024	with tunnel		
20	T1	213365	2024094	above box 12	23-Oct-2024	with tunnel		

3.c Record calls of BCPE at nests with ARUs to have sound material for social attraction

A total of six automatic recording units (ARUs) were installed at Loma del Toro (4 ARUs) and Valle Nuevo (2 ARUs) to capture calls of birds when close to their nests. Table 6 shows their placement in relation to nests as well as the duration of the recordings. No recordings of calls emitted by BCPE in or close to their nests have been available to date; existing recordings are of vocalizations of petrels in flight. Vocalizations acquired at colonies would be an important addition to our limited knowledge of social interactions of the birds.

In January 2024, two ARUs were installed in a small canyon on the eastern part of the Sierra de Bahoruco (see coordinates in Table 6). Gerson Feliz, member of the Diablotin team, was briefly in the canyon in 2014 and documented the presence of some BCPE bones at what might have been a BCPE nest. The team has not been able to explore this area, which has been burned over at least once, so the ARUs were placed to detect presence of birds nesting in the canyon.

All recordings are awaiting formal analysis.

Table 6: ARU placement at different sites

number ARU	location	placement	E (NAD27)	N (NAD27)	recording start	recording end
556	Cañada Cruce Abejas		228980	2010902	29-Jan-24	21-Mar-24
837	Cañada Cruce Abejas		229052	2010907	29-Jan-24	8-Mar-24
555	Valle Nuevo	between VN2 & VN5			9-Feb-24	25-Feb-24
879	Valle Nuevo	close to VN30			10-Feb-24	7-Mar-24
420	Loma del Toro	next to TRO15			22-Feb-24	2-May-24
827	Loma del Toro	between TRO6 & TR19			22-Feb-24	28-May-24
417	Loma del Toro	next to EST1			23-Feb-24	9-May-25
515	Loma del Toro	next to TTRO6			23-Feb-24	23-May-24

3.d Place and test sound broadcast equipment to attract birds to artificial burrows

The sound broadcast equipment was moved to Loma del Toro in January 2024. Unfortunately, heavy rain prevented us from setting up the system at that time. Deployment is now on hold for two reasons: 1) shortage of time and expense to set up the system and 2) the lack of appropriate vocalizations. As stated above, the only recorded vocalizations are of flying birds. Based on personal observation and very preliminary examination of new ARU recordings, it seems that calls in colony differ from those in flight. Ideally, the in-colony vocalizations collected with the ARUs can be used in future broadcasts.

4. Monitor Collisions

During the 2023-2024 season, six grounded birds were recorded. Five were found around the tower array on Loma del Toro, a sixth was found in Vengan-a-Ver, northeast of the Sierra de Bahoruco National Park. Most of the birds appeared to be adults; the one found in July appeared to be a fledgling. Birds or remains were typically found after nights with fog and high winds. Three of the grounded birds were released; one of these was fitted with a satellite transmitter.

Table 7: Grounded petrels in 2023-2024

Date	Location	Notes/Fate
6 November 2023	Loma del Toro towers	Dead with deep cut on wing, bleeding from beak
9 December 2023	Loma del Toro towers	Slight injury, released
31 March 2024	Loma del Toro towers	Appeared uninjured, satellite tagged, released
3 April 2024	Loma del Toro towers	Dead, wing severed
4 April 2024	Loma del Toro towers	Wing feathers only (presumed eaten)
16 July 2024	Vengan-a-Ver	Possibly a fledgling, unharmed, released