



## ANNUAL UPDATE ON ACTIVITIES

### April 2019

ANOTHER FIELD SEASON BEGINS! Please read on for a summary of work and relevant events in 2018 as well as plans for 2019. Activities can be categorized by three basic aims:

- Finding the Petrel
- Understanding the Petrel and Its Threats
- Securing the Petrel (Conservation)

#### **FINDING THE PETREL**

Discovering all the locations where the Diablotin nests, including additional sites in Hispaniola or on other islands, is a fundamental goal for conservationists. Unfortunately, no new locations were detected in 2018.

In 2019, sound meters are again deployed for the purposes of locating additional breeding sites, as well as finding more nests in known breeding sites. Sound meters are back in place on the island of Dominica, deployed near the forest reserve of Morne Rachette by Stephen Durand in January 2019, guided by the findings from radar surveys in 2015. Petrel explorations on Dominica were suspended in 2018 due to hurricane destruction in late 2017, and everyone is eager to continue the search to document nesting and examine hurricane effects on likely habitat (Google Earth imagery of Dominica shows several landslides occurred in these areas).

In the Dominican Republic, Grupo Jaragua has placed four meters in Valle Nuevo and three meters in Zapoten in the Sierra de Bahoruco, where faint calls were heard by ear last season. In Haiti, three meters have been placed along the La Visite escarpment as part of a monitoring program initiated there (see below).

Conservation Metrics, in Santa Cruz, California, stands ready to analyze the recordings gathered from all sound meters.



Sound meter on Morne Rachette, January 2019. *Credit: Stephen Durand*



Stormy Petrel II, used for Gulf Stream Seabirding. Credit: [www.patteson.com](http://www.patteson.com)

Another attempt to capture Black-capped Petrels at sea in order to track them back to their nesting locations is planned for May 2019. The American Bird Conservancy (ABC) is coordinating an expedition into the waters near Cape Hatteras, North Carolina, with staff from South Carolina Cooperative Research Unit at Clemson University, New Zealand Seabird Trust, and Seabirding Pelagic Trips. The team aspires to net up to eight petrels using hand-carved decoys and fit them with lightweight solar satellite tracking units to learn where birds visiting this area actually breed. Given a choice, the team will prioritize the capture of white-morph petrels. [Two color morphs of the Black-capped petrel exist: while most petrels breeding on Hispaniola are of the dark morph (a.k.a dark phase) and are more abundant in

Gulf Stream waters in the fall, white-morph petrels are more abundant off North Carolina in the spring and their breeding grounds have yet to be localized.] It is likely the team will be thrilled to capture Black-capped Petrels of any morph, since it would be the first time to achieve this feat!

Learn more and contribute to the effort at: <https://abcbirds.org/track-the-petrel> -or- <https://www.facebook.com/AmericanBirdConserve/posts/10157060444526810>

## **UNDERSTANDING THE PETREL AND ITS THREATS**

### **FIRST FULL-SEASON MONITORING IN LA VISITE, HAITI**

The La Visite escarpment, in Massif de la Selle, Haiti, which harbors the largest known breeding population of Diablotin, was monitored for a full season for the first time in 2018. This escarpment was the site of the re-discovery of Black-capped Petrels in 1963 and consists of a <2.3 km<sup>2</sup> strip (7 km long and ranging from 40-500 m wide) of remnant broadleaf forest along a steep forested mountainside. Though it lays within a National Park, there are heavy human-use areas located above and below the escarpment, continued clearing of the forest, and intrusions for collection of tree ferns and firewood.

Through coordination by EPIC and funds from Disney Conservation Fund, a team of Haitians led by Anderson Jean (operating through the newly-licensed organization *Jeune En Action Pour La Sauvegarde De l'Ecologie En Haiti (JACSEH)* / (*Young in Action to Save Haiti Ecology*) undertook monthly visits to La Visite from February to July 2018. The team conducted three full days of nest-searching to delineate monitoring area between Tet Kay Jak and Tet Opaque (29 nests in two sub-areas), an area with thick, but penetrable, forest cover and accessible by foot (that is, technical climbing equipment is unnecessary). Petrel nests were identified by the detection of either petrel feathers, petrel feces, petrel scent, or the presence of egg, chick or adult.



Monitoring Team at the La Visite escarpment in March 2018. The team returned monthly through July. Credit: EPIC

Nests within the monitoring area were visited monthly to record contents and status of chicks, if any. Shed feathers were collected for future genetic study, and the habitat was characterized using a scoring method to rate vegetation degradation. Additionally, the team spent three days each month surveying for petrel nests along the escarpment around Pic Cabaio. However, no nests were discovered.

Of a total of 29 petrel nests followed, 15 of the nests were detected to contain an egg, a chick, and/or an adult at some point. Of the 11 nests where eggs or chicks were detected, three chicks fledged. Notably, the seven nests that were initially located with an egg all failed. The cause of failure of petrel eggs to hatch was undetermined. In the four nests that were detected with chicks, three chicks successfully fledged while one nest failed (found with a dead chick, likely by starvation since the entrance to the failed nest was found blocked by harvested tree fern cuttings.) Despite three storm events, no nests were observed to be negatively affected by the rain or any associated run-off.



Cutting of tree ferns in La Visite National Park, Haiti is a serious threat to nesting Black-capped Petrels, as it results in forest loss and cuttings may block burrow openings. *Credit: EPIC*

Successful conservation interventions to address the threats to the La Visite escarpment require an understanding of the drivers of human encroachment. General observations of social/economic conditions reveal a community living in extreme poverty. Many hundred families are living within the La Visite park boundaries, in small, crowded homes, with a lack of access to potable water, healthcare, education, or electricity. The forest hardwood is a main source of energy for this community for cooking as well as a source of income. Agriculture is an additional source of income for most local families, though many farmers lack appropriate farming tools and appear to farm unsustainably.

A full report is available on [website for the working group](#). Contact Adam Brown ([abrown@epicislands.org](mailto:abrown@epicislands.org)) for more information.

The monitoring program will be repeated in 2019, as conditions allow. Camera traps will be deployed if possible, in order to better determine nest activity (In most cavities detected with petrel activity, confirmation of eggs or chicks was impossible due to the difficulty of seeing into deep and/or multi-chambered cavities despite the use of an endoscope) as well as gather information on provisioning rates, chick activity outside the burrow, and predators. The team has deployed three sound meters to gather data on petrel activity on the ridge and will continue searching for new nests to determine the exact extent of the breeding area along the escarpment and to learn more about direct threats. In addition to natural history research, the team will focus on social engagement and relationship-building. Conservation of the Black-capped Petrel in La Visite National Park will hinge on the conservation team's ability to work with communities in the region and to develop interventions that offset the human-based pressures that are currently negatively affecting petrel breeding habitat there.



## NEST MONITORING ELSEWHERE ON HISPANIOLA

Grupo Jaragua continues to spearhead Black-capped Petrel monitoring in multiple locations on Hispaniola. A total of 50 nests were monitored during the 2017/18 breeding season at four different locations. In the breeding location on Morne Vincent, next to the community of Boukan Chat, 14 nests were monitored with indications of fledged chicks from twelve. In Loma Quemada, DR, five nests were followed, with two chicks fledged. In Loma del Toro, 30 nests were followed, of which only 14 appeared to have fledged chicks, and the one known nest in Valle Nuevo failed.

Camera traps were again installed in Loma del Toro, Loma Quemada and Valle Nuevo to monitor predator presence (traps were not set in Morne Vincent due to concerns about theft/tampering). In 2018, direct negative effects of introduced predators on Diablotin breeding success were documented for the first time. At one area within Loma del Toro, none of the nine monitored nests produced a chick. This failure was attributed to the presence of a cat, which was registered on camera traps throughout the breeding season, although it was not possible to document a direct attack on an adult or chick. Additionally, in Valle Nuevo, adult petrels stopped visiting their nest (the only known petrel nest in the area) after a mongoose was photographed entering the burrow several times in a row. At all sites, rats were present; however, to date, cameras have not documented any direct negative impact of rats on nesting activity. The site Loma Quemada shows continued intensive presence of feral pigs and reproduction seems to be limited to only a few nests which, due to their structure of entrance and deepness of crevice, impedes pigs from predated these nests.



Mongoose at petrel nest in Valle Nuevo.  
*Credit: Grupo Jaragua.*

Two other unusual findings last season were a late fledging and a high number of abandoned eggs and empty nests. During the last nest check at Morne Vincent (end of August 2018), one healthy-looking mature fledgling was still found in its nest. During all the previous years, fledglings had left the nest the latest at the end of July. The cause of the nest and egg abandonment NOT due to predators (described above) is unknown; as there are no apparent causes apparent on land, the cause may be due to conditions at sea.

In 2019, Grupo Jaragua will continue its program of monitoring at sites in the DR and Haiti-DR border and commence trapping activities to reduce the predation threat. To date, the U.S. Fish and Wildlife Service has been a key source of support for Grupo Jaragua's monitoring work; this year, a French organization, Fondation Ensemble, joined the list of donors.



Ground searches have already paid off: the Grupo Jaragua field team has just reported three nests discovered in Valle Nuevo, adding to the one known nest found there in 2017.

One of three nests newly discovered March 2019 in Valle Nuevo, Dominican Republic.  
*Credit: Grupo Jaragua*

## PRELIMINARY PREDICTIVE HABITAT MODELLING

Using Grupo Jaragua's data on nests in the Dominican Republic, Yvan Satgé, with the South Carolina Cooperative Research Unit - Clemson University, modeled suitable nesting habitat for petrels in Hispaniola with an eye to locating unknown nesting areas. Additional nest data will be used to test and improve the model, but it showed some interesting and promising results. Among others, an area in northern Haiti and coastal ranges in southern DR show up as suitable – previously these areas were not suspected to harbor petrel populations and were not surveyed by radar. Preliminary results were presented in a poster at the Pacific Seabird Group meeting (available on the [working group website](#)). Once the model have been tested and improved, Yvan plans on expanding the analysis to predict suitable habitat in the whole Caribbean region.

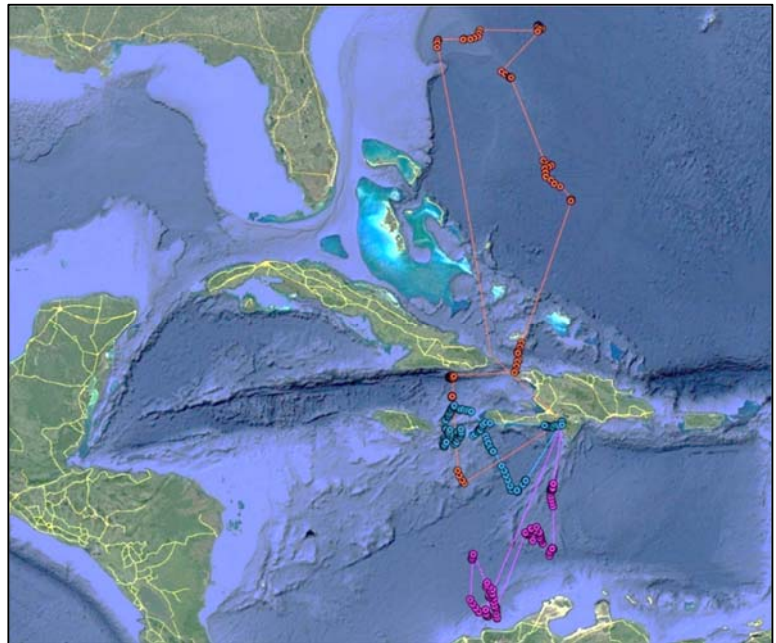
## RESULTS OF GPS TRACKING OF CHICK-REARING PETRELS FROM LOMA DEL TORO

During April 2018, Yvan Satgé and Patrick Jodice (USGS, also with the South Carolina Cooperative Research Unit) collaborated with Grupo Jaragua to track chick-rearing Diablotins using GPS technology. The project was funded by their institutions and the Neotropical Bird Club, with support from Voltaic Systems. Twelve adults were captured at Loma del Toro and loggers were deployed on the nine heaviest birds.

Tracking data were recovered from only three petrels but these individuals traveled between 2,000 and 4,000 km during foraging trips to the Guajira upwelling off Colombia, the Jamaica-Haiti channel, or the waters off the Gulf Stream. Each petrel appeared to forage one-third of the time it spent at sea. Two of the birds foraged in areas that characterized by oceanographic processes such as the Guajira upwelling off Colombia and temperature fronts in western Sargasso Sea. These two areas overlapped with fishing effort in the region for commercial longline and trawling.

Tracks of three chick-provisioning petrels gathered from GPS loggers, April 2018.

*Credit: Yvan Satgé, SCCRU*



Fine-scale GPS data from two petrels also suggested that they rested on the sea surface near established (~8km southeast of Jacmel, Haiti) or suspected (~25km south of Santiago, Cuba) breeding colonies. Both birds arrived in the middle of the day and departed after sunset, with one subsequently flying back to the breeding colony in Sierra de Bahoruco.

Next steps: As stated in the report, “exposure at the macro scale [to marine threats associated with fisheries and oil and gas activities, and those associated with urban lighting and terrestrial wind farms near flight paths to and from colonies] serves as a reasonable justification to encourage the collection of additional data to determine if petrels may be negatively impacted by these threats, as opposed to simply overlapping with their presence.” Funds are needed to collect this additional data.



A full report will be available soon on the working group's website. Yvan's blogs about fieldwork can be found at on [www.birdscaribbean.org](http://www.birdscaribbean.org): [Part I - On the ridge](#), [Part II-Finger bites and football matches](#).

Colorful, educational posters "Travels of Diablotin", with artwork by Noah Jodice, show the results of the 2014 satellite tracking study. They are available in Kreyol, French, Spanish and English: see the link on the working group website and please feel free to share to anyone interested!

### YET TO COME: DIET ANALYSIS USING FECAL DNA AND OTHER ANALYSES

With funding from BirdsCaribbean's Dave S. Lee Fund for the Conservation of Caribbean Birds, Yvan Satgé also collected fecal samples from nesting petrels in April 2018. Once import/export permits are granted for the samples, Yvan will perform a molecular analysis of prey DNA present in the feces. Feather samples for analyses of wintering diet and contaminant loads, and biological samples from eggs

found abandoned or damaged in nests, were also collected; these samples will be analyzed once additional funding is available. Preserved eggshells were given to the Dominican Museum of Natural History. Yvan is also looking for information about an insect larva found in a petrel burrow that used petrel feathers in its cocoon. Contact [ysatge@clermson.edu](mailto:ysatge@clermson.edu) if you have information.

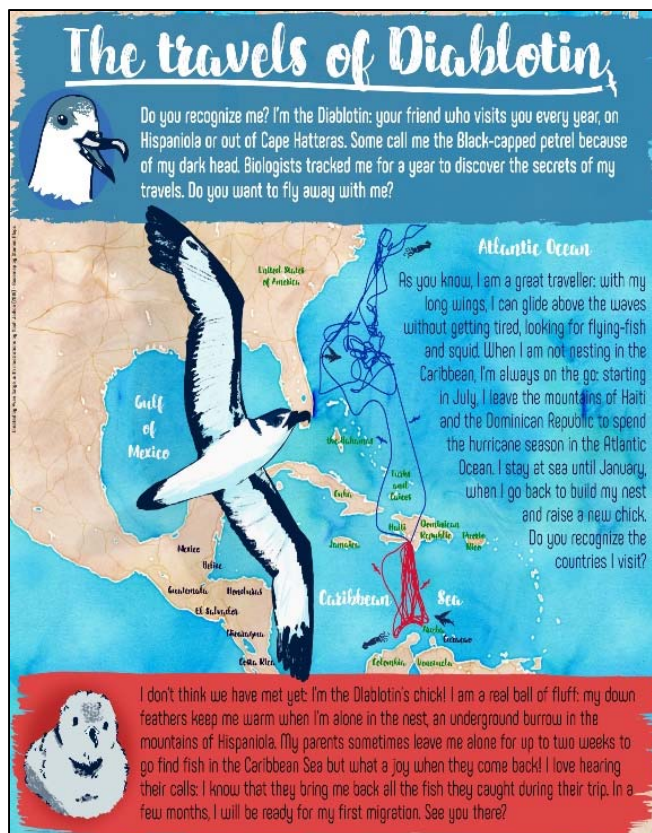
### SOME SIGHTINGS IN THE GULF OF MEXICO

Prompted by the 2010 Deepwater Horizon Oil Spill, several U.S. government agencies have partnered on a study called "Gulf of Mexico Marine Assessment Program for Protected Species (GoMMAPPS)" to gather new information on the abundance, distribution, habitat use, and behavior of marine species in the Gulf of Mexico. The core of the GoMMAPPS program is to conduct broad-scale surveys for marine mammals, sea turtles, and seabirds from near shore to the U.S. EEZ in the northern Gulf of Mexico. Planning for the project began in 2015, fieldwork began in Spring 2017, and the Program runs through 2020. The effort is turning up some Black-capped Petrels observations in the Gulf of Mexico. To date, the numbers just from GoMMAPPS vessel surveys are 26 observations of 28 birds; 15 of which were encountered just during surveys in Aug 2018 (J. Gleason, pers. comm).

### MODELLING AT-SEA DENSITY IN THE U.S. ATLANTIC

In June 2018, Arlyss Winship (NOAA) and colleagues published models to predict the relative densities of marine birds in the U.S. Atlantic Outer Continental Shelf (OCS)<sup>1</sup>. Using data from recent at-sea surveys, they developed

<sup>1</sup> See Winship, A.J., Kinlan, B.P., White, T.P., Leirness, J.B., and Christensen, J., 2018. Modeling At-Sea Density of Marine Birds to Support Atlantic Marine Renewable Energy Planning: Final Report. U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs, Sterling, VA. OCS Study BOEM 2018-010. x+66 pp.



seasonal maps of seabird distribution by linking the density of species with oceanographic datasets. The fall and winter models for Black-capped petrel were the best performing models across all species and seasons. The variables that most strongly predicted Black-capped petrel distribution varied across seasons but, in general, the species' distribution was best explained by the physical oceanography of the area. Petrels did not seem to respond strongly to atmospheric conditions but, instead, preferred oceanographic fronts typical of the Gulf Stream and upwelling processes. Despite little at-sea survey effort east of the Gulf Stream, the models predicting a high relative density of Black-capped petrel for an area around the Blake Spur were supported by results of satellite tracking (Jodice et al. 2015). However, Winship et al. warn that, given the limited survey coverage far from shore, relative densities in other offshore areas may have been over-inflated (e.g., summer distribution).

Maps of the modeled seasonal distribution for the Black-capped petrel are available online on the Northeast Ocean Data explorer (<https://www.northeastoceandata.org/data-explorer/?birds|individual-species>).

## **SECURING THE PETREL**

### **COMMUNITY ENGAGEMENT IN BOUKAN CHAT**

To address the threat of human encroachment at a known nesting area along the Haiti-DR border, work continues in the community of Boukan Chat.

The international non-profit Plant With Purpose continues to engage with farmers, using Village Savings and Loan Associations (VSLAs) to deliver training and implement sustainable agricultural practices. This season, they are committed to:

- Continuance of engagement with existing VSLAs; forming new ones if appropriate.
- Tree planting for reforestation and alternative crops
- Ongoing training for farmers in soil conservation measures, to improve water retention and stabilization of soil (including linear barriers)
- Training farmers in how to fund, build and maintain their own nurseries, to supplement the GIZ-funded ones
- Developing alternatives to chemical/synthetic herbicides and fertilizers

Grupo Jaragua's local staff continues to support the German aid organization (GIZ) funded nursery in Boukan Chat, which produces saplings of avocado, coffee, prunes, grapefruit, oranges and peaches for agroforestry. An evaluation in August 2018 showed over 50% establishment of 1200 avocado saplings planted earlier in the year. Other detailed inventories to document the more exact fate of the planted material will be conducted. In addition, this nursery has served for educational purposes and has been a place for interchange of ideas and experience.

Production of coffee saplings (below, left) and a visit by a group of students and professors from the agricultural department of Université Saint Francois d'Assise d'Haiti (below, right) at the GIZ-funded





Youth and early environmental education continued in 2018 as did community outreach: After it was piloted in 2017, the official Annual Petrel Festival was launched in 2018. An annual celebration of the species in the community that celebrates the uniqueness of the bird and the habitat it shares with the village of Boukan Chat will increase pride in the petrel and will lead to an eagerness of the community to protect the species. The 2018 festival was really a big deal event: Local school groups led a species parade and the local men’s soccer club outfitted in uniforms sporting a petrel logo played against a neighbor soccer team.



René Louis leads the parade of school children as a human-sized Diablotin (above); a crowd of community members view “Haiti, My Love, My Home” on a screen taped to a village wall (left). Credits: Grupo Jaragua, EPIC)

The Boukan Chat community was shown a short-film, “Haiti, My Love, My Home”, that depicts the community’s role in petrel conservation, and the power of the film was obvious. People were spell-bound, calling that it be shown again and again, asking many questions. Filming by Soulcraft Allstars is continuing and they are working on another installment in a series.

“Haiti, My Love, My Home” is online at <https://www.facebook.com/epicislands/videos/2130814866935450/>. Once you watch it, please like, comment, and most importantly SHARE the post, to spread the news of Diablotin conservation far and wide!

### **PREDATOR CONTROL AT DOMINICAN REPUBLIC SITES**

As previously noted, based on the documented negative predator activities seen during the 2018 monitoring season, predator control is being pursued for Loma del Toro (site TTRO in particular), Loma Quemada and Valle Nuevo during this breeding season. For several years now, Grupo Jaragua has been implementing a successful predator control program for Ricord’s iguanas, eliminating feral dogs, cats and mongooses during vital periods of the nesting season of this critically endangered species. A similar program will be set up for the Black-capped petrel as funding allows

### **TOOLS TO REDUCE THE THREAT OF STRIKES AND STRANDINGS**

Conservationists on Hispaniola continue to work towards reducing petrel strikes. Park administrations in both Sierra de Bahoruco and Valle Nuevo have been instructed about the importance of finding and saving downed birds. Special attention has been given to the park guards at Loma del Toro where communication towers have negative effects on flying petrels. Flyers with release protocols in Spanish have been distributed to all park guard stations in the Sierra de Bahoruco National Park and Valle Nuevo National Park, as well as in different institutions in Pedernales, Puerto Escondido and Duvergé. Fliers in Kreyol have been distributed in Anse-a-Pitres and Marigot as well as Seguin, Thiotte and Port-au-Prince.



Despite intensive promotion of the interest to document the fate of downed birds, only one case was reported to Grupo Jaragua in 2018. The bird was found on the ground at Loma del Toro in December by one of the guards. It seemed unharmed and was released successfully from one of the communication towers.

Release Protocol Flyers are available in Kreyol and Spanish on the [working group website](#).

**Carrying On with new source of Support: BirdsCaribbean's [Betty Petersen Fund for Conservation](#)**

Many organizations have contributed to the conservation work in Boukan Chat, including those working on the ground drawing on general funds and several granting agencies. Now a new fund has been tapped to support petrel conservation. The "Betty Fund" was created to support conservation projects in the Caribbean that engage and empower communities and stakeholders to both protect and sustainably benefit from their birds. This approach was used successfully by the woman in whose memory the Betty Fund is named.

With dedicated funding through EPIC for two years (2019 and 2020), EPIC, Plant with Purpose, JACSEH and Grupo Jaragua will be able to continue and enhance activities in Boukan Chat to alleviate poverty and increase the ecological sustainability of agricultural practices, increase awareness, and foster stewardship of the Black-capped Petrel through education and outreach events. To assess success, they will map and monitor local petrel breeding habitat as well as track petrel breeding success in petrel nesting colonies adjacent to the project site.

**U.S. ENDANGERED SPECIES ACT LISTING RECOMMENDATION**

On October 9, 2018, the U.S. Fish and Wildlife Service (USFWS) released an Endangered Species Act (ESA) Species Status Assessment Version 1.1 for the Black-capped Petrel, as well as a Proposed Rule for the Black-capped Petrel's Listing on the U.S. Endangered Species Act. These are viewable at [www.regulations.gov](http://www.regulations.gov), search under Docket [FWS-R4-ES-2018-0043](#).

The USFWS has proposed to list the Black-capped Petrel as a Threatened species under the ESA; this proposal calls for recovery planning, funds for management and recovery in the U.S., and conference or consultation by Federal agencies whose actions may impact the species. However, the proposal invokes the 4(d) rule, seeking to adopt existing requirements under the U.S. Migratory Bird Treaty Act (MBTA) as the appropriate regulatory provisions – that is, incidental take would not be prohibited, and purposeful take would be prohibited unless the activity is authorized or exempted under the MBTA. Finally, the USFWS has determined that designation of critical habitat for the Black-capped Petrel is not prudent at this time.

Several aspects of the Proposed Rule are concerning to the petrel conservation community. Comments were submitted to the USFWS by twenty-one entities. Organizations commenting included the American Bird Conservancy, Atlantic Marine Bird Conservation Cooperative, BirdsCaribbean, Center for Biological Diversity, EPIC, National Audubon Society, North Carolina Wildlife Resources Commission, Pacific Seabird Group as well as a number of organizations signing on to a letter submitted by the Chairs of the International Black-capped Petrel Conservation Group; individuals commenting included several graduate students and professors. Primary among concerns were that the petrel warranted an "Endangered" listing (more in peril than "Threatened"); additionally, concerns were raised about interpretations of available information, assumptions made despite lack of information, and lack of protections include prohibitions against incidental take or designation of critical habitat.

In his comments to the USFWS, Yvan Satgé provided information on the spatial overlap of petrels tracked by satellite in 2014 with oil and gas activity in the southern Caribbean. The satellite-tracked petrels that foraged in the southern Caribbean Sea occurred in Colombian lease areas currently under evaluation, under exploration, or

opened for concession. In addition, petrels occurred at 34 km and 50 km of the active Venezuelan lease area and well in production. Black-capped petrels utilizing these areas for foraging and resting could be exposed to hydrocarbon releases during accidental oil spills and to increased concentrations of contaminants from uncontrolled seepage.

## **WORKING GROUP CONSIDERATIONS**

### **MEETING OF THE INTERNATIONAL BLACK-CAPPED PETREL CONSERVATION GROUP**

A meeting will take place at the [BirdsCaribbean International Conference](#), to be held in Gosier, Guadeloupe, 25-29 July, 2019. Exact time and date are yet to be set. A particular goal of the gathering will be to engage participants from French West Indies, as hope persists that the Diablotin remains in Guadeloupe and possibly Martinique. This will be a good opportunity to discuss the possibility of using radar to detect petrels on these islands, especially because a second radar survey is planned for nearby Dominica in early 2020. Another topic of discussion could be the possibility of exchanges of staff between Dominica and Guadeloupe/Martinique during expeditions to find petrels. Contact [Jennifer.Wheeler@birdscaribbean.org](mailto:Jennifer.Wheeler@birdscaribbean.org) for more information.



Listserv: Group members can stay in touch with one another using the [Diablotin@yahogroups.com](mailto:Diablotin@yahogroups.com) list. All interested parties are invited to join. Go to <http://groups.yahoo.com>, search under “Diablotin” and sign up. You need not have a Yahoo account.

Website: The [website for the working group](#) is hosted by BirdsCaribbean and includes a library of unpublished documents related to the Black-capped Petrel project. The website library now includes the unpublished reports noted in this newsletter as well as links to open access educational materials.

Please visit [www.BirdsCaribbean.org](http://www.BirdsCaribbean.org), and search under “Petrel” or go directly to <https://www.birdscaribbean.org/our-work/black-capped-petrel-working-group/>

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