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Where do some Aotearoa New Zealand seabirds go? Records of *Thalassarche* albatrosses and *Procellaria* petrels in Ecuadorian waters.

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Abstract: Albatrosses and petrels are among the most endangered seabird species worldwide. They face threats such as plastic ingestion, bycatch in fisheries, invasive predators at breeding sites, light pollution, and climate change. Many seabird species from Aotearoa New Zealand migrate to the eastern Pacific waters during the non-breeding season, following the abundant food availability of the Humboldt current. In this article, we compile observations of *Thalassarche* and *Procellaria* petrels in Ecuadorian waters from five information sources such as incidental tourist vessel observations, incidental fishermen observations, beach patrols, seawatching and GLS loggers. We provide strong evidence of the presence of Salvin's albatross and White-chinned petrel in Ecuador, two species previously considered hypothetical for the country's official bird list. Additionally, we present photographic evidence of a live Southern Buller's albatross in Ecuador and document further observations of the black petrel, including its interactions with local fisheries. These records emphasize the importance of enhancing monitoring efforts to gain a deeper understanding of the ecology and conservation of Ecuador's seabirds. They also highlight the necessity and advantages of collaboration between New Zealand and Ecuador concerning highly mobile bird species.

Resumen. Los albatros y petreles son unas de las especies más amenazadas en el planeta. Las amenazas para estas especies incluyen ingestión de plásticos, pesca incidental, especies invasoras en colonias de reproducción, contaminación lumínica y cambio climático. Muchas de las aves marinas de Nueva Zelanda migran al Océano Pacifico este durante la época no reproductiva siguiendo la abundancia de alimentos de la corriente oceánica de Humboldt. En este articulo usamos cinco diferentes fuentes de información tales como observaciones incidentales de botes turísticos, botes de pesca, patrullas de palayas, seawatching y GLS para compilar observaciones de albatros *Thalassarche* y petreles *Procellaria* que visitan aguas ecuatorianas. Nosotros presentamos evidencia robusta sobre la presencia del albatros de Salvin y el petrel barba blanca en Ecuador, las mismas que son consideradas hipotéticas para la lista oficial de aves de Ecuador. Adicionalmente, presentamos evidencia fotográfica de un individuo vivo del albatros de Buller del sur en el país y añadimos más observaciones del petrel de Parkinson y las interacciones que esta especie tiene con las pesquerías locales. Estos registros destacan la importancia de aumentar los esfuerzos de monitoreo para comprender mejor la ecología y conservación de las aves marinas de Ecuador. También resaltan la necesidad y los beneficios de la colaboración entre Nueva Zelanda y Ecuador en relación con las especies marinas migratorias.

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INTRODCUTION

Procellariiforms are one of the most threatened groups of birds, facing numerous risks including plastic ingestion, fisheries bycatch, invasive predators at breeding sites, light pollution, and climate change (e.g., Dias *et al*., 2019). Aotearoa New Zealand, known as the seabird capital of the world, boasts a rich diversity and abundance of procellariiforms and other seabird species (Taylor 2000). The majority of the albatross and petrel species breeding in Aotearoa New Zealand are highly migratory, spending part of their lives in the upwelling zones of the Humboldt Current off the west coast of South America during the pre- and non-breeding periods (Robertson *et al*., 2013; Fischer *et al*., 2023). Although a recent global assessment categorised this area as low-risk for plastic exposure compared to other regions in the Pacific (Clark *et al*., 2023), these non-breeding grounds still expose albatrosses and petrels to significant human-induced threats, particularly fisheries bycatch (Coello *et al*., 2010; Anderson *et al*., 2011; Good *et al*., 2020). Understanding the presence and distribution of these vulnerable species in international waters and the jurisdictions they rely on is essential for mitigating threats such as fisheries bycatch (Fischer *et al*., 2023).

At least three procellariiforms species breeding in Aotearoa New Zealand are recorded as recurrent in Ecuadorian waters: Buller's albatross (*Thalassarche bulleri*), Buller's shearwater (*Ardenna bulleri*), and black petrel (*Procellaria parkinsoni*) (Haase 2019). All three species are of high conservation interest, as all are prone to bycatch and all are considered Vulnerable (IUCN Red List 2023). Additionally, the black petrel is the flagship species for a bilateral Memorandum of Understanding between the Aotearoa New Zealand and Ecuadorian Governments to address threats and improve the conservation status of Aotearoa New Zealand migratory birds. One of the objectives of this Memorandum of Understanding is to identify the vulnerable species within Ecuadorian waters that would benefit from bycatch mitigation efforts. In this article, using fishermen and vessel observation, skull morphology from carcasses, and GLS analysis we confirm the presence of another two Aotearoa New Zealand seabird species in Ecuadorian waters, which were considered hypothetical for Ecuador's official bird list (Freile *et al*., 2022): Salvin's albatross (*T. salvini*) and white-chinned petrel (*P. aequinoctialis*). Furthermore, we present new records of southern Buller's albatross (*T. b. bulleri*) and black petrels in Ecuador's waters, that further reinforce the importance of Ecuadorian waters for these species.

MATERIAL AND METHODS

We compile opportunistic observations by tourist vessels, Ecuadorian fishermen, beach patrols, seawatching and GLS logger data from *Thalassarche* albatrosses (known generally as 'grey albatross' by Ecuadorian fishermen, including *T. salvini*, *T. bulleri* and *T. melanophris)* and *Procellaria* petrels in Ecuador. Observations were compiled in three different categories: sightings of live animals from vessels and seawatching, records of dead specimens found in beach patrols, and GLS tracking data from alive individuals. Vessel-based sightings were performed in two locations; offshore Santa Elena peninsula and from Puerto Lopez village to La Plata Island. Beach patrols were undertaken on the south of the Santa Elena peninsula at the localities of Mar Bravo and Punta Carnero beaches.

For two unconfirmed Salvins' albatross specimens recovered from beach patrols, in Ecuador, we applied the skull morphology measurements detailed by Piro & Acosta-Hospitaleche (2019) and compared both specimens with identified specimens from the collections in the Auckland Museum (AM) in Aotearoa New Zealand, the morphosource.org (MS) (Bjarnason & Benson 2021), and private collections in Ecuador (EC). We compared the skulls from the two unconfirmed Salvin's albatross with 13 specimens (skull) from four confirmed albatross species: two Salvin's albatross (AM), four waved albatross (*Phoebastria irrorata*) (EC & MS), four Buller's albatross (AM & EC) and three black-browed albatross (*T. melanoprhis*) (AM & EC). After taking measurements, seven out of 24 morphometric measures were excluded due to incomplete skulls. The measures removed from the dataset were: length of the *fossa glandulae nasalis* (FGL); minimum width between the *ossa frontali* (FW); minimum width between *fossae glandulae nasalis* (MFF); length of the *ramus mandibulae* (ML); *apertura nasi ossea* length (NL); preorbital width at the level of the *processus supraorbitalis* of the *os lacrimale* (PrW), and total length from the *preminetia cerebellaris* to the tip of the beak (TL). To reduce error, all measurements were taken two times by the same person. After computing the average between the first and second measurement a traditional Principal Component Analysis (PCA) was performed.

To analyse the GLS data, we processed the light, immersion, and temperature data, collected by C330 GLS tag (Migrate Technologiesin) in the R package *probGLS* (Merkel *et al.* 2016) as per Fischer *et al.* (2023) to infer location data.

RESULTS

Salvin's albatross

The species is widely distributed in the northern Humboldt upwelling systems off the coast of Peru

(Fischer *et al*., 2023). A published record of a stranded bird and a preserved skull in a museum collection are the only records of the species for Ecuador (Haase 2019). Nevertheless, another skull recovered from a beached bird (Fig. 1) on September 2022 in Salinas is believed to belong to this species. Notably, this bird showed indications of an anthropogenic blunt-force trauma to the upper mandible, which may be related to fisheries interactions (Gianuca *et al*., 2020). The skull morphology measurements analysis show the first two components covered 56.5% of the total morphological variance in the dataset. By plotting these results, we found that the two skulls believed to be Salvin's albatross (Skull 1 and 2; Fig. 2) cluster most closely with measurements from the Salvin's albatross specimens in the Auckland Museum. Despite the clustering more data may be needed to draw better conclusions.

Figure 1. Salvin's albatross carcass found on Mar Bravo beach in September 2022. Photo credit: Giovanny Suarez.

To further corroborate the presence of Salvin's albatross in Ecuador, we present a GLS track of a breeding adult tagged on Hauriri Bounty Islands on the colony of Proclamation Island, Aotearoa New Zealand in October 2018 and retrieved the subsequent year (Sagar *et al.* 2018; Thompson *et al.* 2020). The location data illustrated that this bird most likely reached Ecuadorian waters in July 2019. However, some caution is needed when interpreting these data as locations inferred from GLS tags are surrounded by considerable error (~145 km;

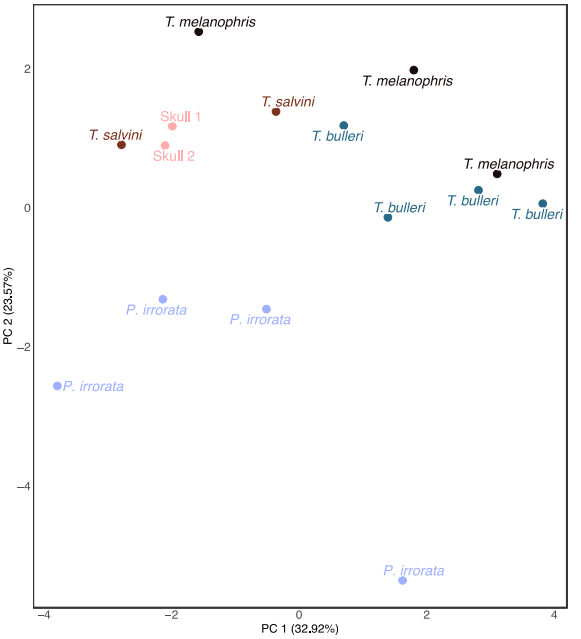

Figure 2. PCA of 13 skull specimens of albatross recorded for Ecuador. Skull 1 and 2 correspond to the two specimens found in Ecuadorian coast.

Merkel *et al.* 2016) (Fig. 3). The data of this track and other individuals tracked from Hauriri Bounty Islands can be accessed online (dataset 2077 on https://www.seabirdtracking.org/).

We compiled verbal and photographic observations from artisanal fishermen of 'grey albatross' in Ecuadorian waters. In doing so, we found a record of a juvenile Salvin's albatross in August 2022 observed 22 km from the Santa Elena Peninsula that was confirmed by a photograph (Fig. 3). Fishermen interviewed highlight that 'grey albatross' are fairly common in Ecuadorian waters from July to October every year. However, these observations could also overlap with the more common Buller's or black-browed albatross. Additionally, a live individual was observed during the seawatching monitoring of the Museo de Ballenas on 30 Jul 2024. Despite no photographs being taken, the observer's previous experience with the species, along with the distinct wing and beak colouration, confirmed the identification. Here, we present enough evidence to affirm that Salvin's albatross utilise or pass through Ecuadorian waters as the species have previously been reported north of the Equator in Hawai'i (Robertson *et al.* 2005), Alaska (Howell *et al.* 2014), California (del Hoyo *et al.* 2020) and Costa Rica (Arias 2024); and thus this species should be added to the country's bird list.

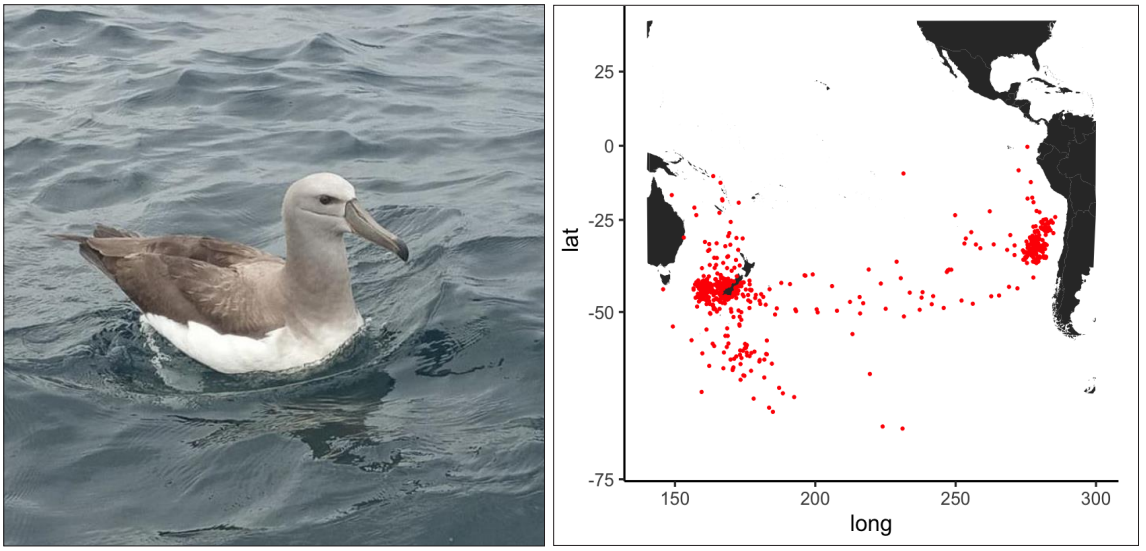

Figure 3. a) Juvenile Salvin's albatross observed in August 2022 offshore of Santa Elena Peninsula. b) Salvin's albatross track during October 2018 to October 2019 from New Zealand Hauriri Bounty Islands colonies in the subantarctic islands to South America and reaching Ecuadorian waters. Photo credit: Giovanny Suarez.

Southern Buller's albatross

The species is considered rare in Ecuador, but this may reflect a lack of pelagic monitoring. As mentioned above, fishermen possibly record this species more often than thought in Ecuadorian waters. Recently, more information has become available on the genetic and plumage differentiation between the two subspecies of Buller's albatross (Wold *et al*., 2021; Wold *et al*., 2018, Quiñones *et al.* 2023), the northern Buller's albatross (*Thalassarche b. platei)* and the southern Buller's albatross (*Thalasarche b. bulleri*). The previous two published Ecuadorian records of Buller's albatross (Haase 2019) do not specify the records to subspecies level, as these records were obtained from beached individuals in which only the beak colouration was used as an identification feature to species level. In this article, we used the skull morphology of Buller's albatross without differentiating between subspecies as the skulls used were cleaned of plumage after being collected from the Ecuadorian beaches. Nevertheless, a recent study in Peruvian waters shows that the most abundant taxon was the northern subspecies (Quiñones *et al.,* 2023). Here, we report an individual southern Buller's albatross sighted from a tourist boat and identified by EMRR 20 km from the shore of Puerto Lopez village on the way to La Plata Island. The individual was recorded in October 2023 feeding on a dead seabird. The plumage and beak colouration of the individual corresponded to an adult southern Buller's albatross based on the identification features presented in Quiñones *et al.* (2023) (Fig. 4). This is the first documented record of a live individual of this species for Ecuador. We hypothesise that the northern subspecies is also present in the country, but photographic evidence is needed to confirm its presence.

Figure 4. Adult southern Buller's albatross photographed offshore from Puerto Lopez village in October 2023. Photo credit: Simone Schraven.

Black petrel

The presence of this vulnerable species is widely documented for Ecuadorian waters. Several hundred individuals have previously been

observed offshore of Santa Elena Peninsula during a sea watching project on the Ecuadorian coast (Haase 2019). Additionally, a group of at least ten individuals was recorded near the Ecuadorian shores during a wreck event in 2016 (Reyes *et al*., 2017) and a raft of individuals has also been observed in the Galapagos Islands (Gaskin, *et al*., 2016). Here we add several more records of the species. One individual was observed 18 km off the shore of Puerto Lopez on the way to La Plata Island in September 2023. This individual was observed following a trawling fishing boat alongside other seabird species such as guanay cormorant (*Leucocarbo bougainvillii*), sooty shearwaters (*Ardenna grisea*), brown pelicans (*Pelecanus occidentalis),* magnificent frigatebirds (*Fregata magnificens*) and brown noddy (*Anous stolidus*). Additionally, in March 2024 a flock of around 25 individuals were observed by BH in a pelagic tour 34 km southwest from Santa Elena peninsula. One individual in particular was observed with nylon attached to its beak presumably as a release from a bycatch (Figure 5). Finally a dead specimen was found by BH around 150 metres from the coast on the Mar Bravo Salt pools in June 2024, representing the first case of the species reported inshore in the country.

Figure 5. Black petrel observed offshore from Santa Elena peninsula. Note the nylon thread attached to the beak of the individual presumably as a release from bycatch. Photo credit: Ben Haase.

White-chinned petrel

This species is considered rare in Ecuadorian waters (Ridgely & Greenfield 2001) and hypothetical by the Ecuadorian Committee of Ornithological Records (Freile *et al.,* 2022). Nevertheless, an analysis of the global distribution of the species showed that white-chinned petrels from various colonies spend their non-breeding period (May to September) off western South America in a zone between Ecuador and Chile, with birds from Maukahuka Auckland Island visiting Ecuadorian waters before returning to Aotearoa New Zealand in October (Elliott *et al*., 2020; Rexer-Huber 2017) (Fig. 6). Here, we report two individuals of unknown origin found during beach patrols on Mar Bravo beach in Ecuador. One was found in 2020 and the other on 20 September 2023. Both individuals were mummified (bones, dry skin, and feathers), but the size and the characteristic white patch underneath and around the base of the beak (Fig. 7) confirmed this species. As these two individuals were found in different years, the presence of the species in Ecuadorian waters may not be associated with El Niño Southern Oscillation events, but be more reflective of the usual distribution of the species, as was suggested by Rexer-Huber (2017). To the best of our knowledge, the records presented in this note are the first documented for the country.

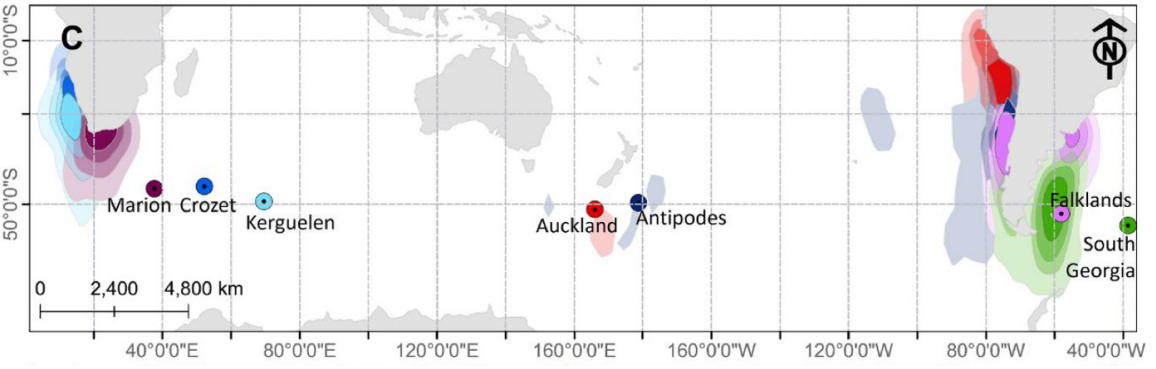

Figure 6. Global distributions of white-chinned petrel island populations over nonbreeding stages (May-September). Colour dots represent breeding colonies while coloured areas represents nonbreeding grounds of the species corresponding to a particular breeding site. Reproduced with permission from Rexer-Huber (2017).

Figure 7. White-chinned petrel carcass found on Mar Bravo Beach in August 2023. Photo credit: Enzo Reyes.

DISCUSSION

In this article, we removed uncertainty around the presence of two oceanic and highly migratory Aotearoa New Zealand seabirds in Ecuador: Salvin's albatross and white-chinned petrel. We present robust evidence from a variety of data sources and recommend the change from the hypothetical status for these two species in Ecuador, and recommend them to be fully listed on the country's species list. Furthermore, we also document the first live record of southern Buller's albatross for the country and provide further evidence of the common presence of the black petrel in Ecuadorian waters. We highlight the threats faced by black petrels from fisheries activities, as demonstrated by the individual found with nylon attached (Fig 5), likely from a snood or branch line of a pelagic longline fishing line. The location of the line suggests that the hook is still inside the bird's mouth or digestive tract, which could have detrimental or fatal consequences.

In general, data on the distribution and conservation status of many seabird species in Ecuador are scarce due to the lack of standardised monitoring at sea or coordinated beach patrols, and the fact that tracking data are heavily biased towards breeding adults (e.g., Carneiro *et al.* 2020, Fischer *et al.* 2023). This note further highlights the seabird diversity that depends on Ecuadorian waters, and indicates that further research into the ecology and conservation of these species in these waters is required. This need for further research is particularly pertinent given the sensitivity of these albatross and petrel species to fisheries interactions, highlighted by the anthropogenic blunt-force trauma recorded in the Salvin's albatross in Fig. 1. We hope that further work, both in Aotearoa New Zealand through tracking, and in Ecuador through surveys, will improve insights into the ecology and conservation of Ecuador's seabirds. Additionally, we highlight the need and benefit for collaboration between countries, with regard to highly mobile bird species.

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LITERATURE CITED

Anderson, O.R.; Small, C.J.; Croxall, J.P.; Dunn, E.K.; Sullivan, B. J.; Yates, O.; Black, A. 2011. Global seabird bycatch in longline fisheries. *Endangered Species Research 14*(2): 91-106.

Arias, S. 2024. Primer registro del albatross de Salvin (*Thalassarche salvini*) y nuevos registros del albatross de Galapagos (*Phoebastria irrorata*) en Costa Rica. *Zeledonia 28*(1): 59-58.

Birdlife International 2023. https://data.seabirdtracking.org/dataset/2077

Bjarnason, A.; Benson R.B.J. 2021. A 3D geometric morphometric dataset quantifying skeletal variation in birds. *MorphoMuseuM* 7(1).

Clark, B.L.; Carneiro, A.P.B.; Pearmain, E.J. *et al.* 2023. Global assessment of marine plastic exposure risk for oceanic birds. *Nature Communications 14*: 3665.

Carneiro *et al.* 2020. A framework for mapping the distribution of seabirds by integrating tracking, demography and phenology. *Journal of Applied Ecology 57*(3): 514-525.

Coello, D.; Herrera, M.; Calle, M.; Castro, R.; Medina, C.; Chalen, X. 2010. Incidencia de tiburones, rayas, aves, tortugas y mamiferos marinos en la pesca artesanal con enmalle de superficie en la Caleta Pesquera de Santa Rosa (proviencia de Santa Elena). Intituto Nacional de Pesca. *Boletin Especial 2*(3) 1-55.

Del Hoyo, J.; Collar, N.; Kirwan, G.M. 2020. Salvin's albatross (*Thalassarche salvini*), version 1.0. *In* Birds of the World (del Hoyo, J.; Elliott, A.; Sargatal, J.; Christie, D.A.; de Juana, E, eds.) Cornell Lab of Ornithology, Ithaca, USA

Dias, M.P.; Martin, R.; Pearmain, E.J.; Burfield, I. J.; Small, C.; Phillips, R.A.; Yates, O.; Lascelles, B.; Borboroglu, P.G.; Croxall, J.P. 2019. Threats to seabirds: a global assessment. *Biological Conservation* 237: 525–537.

Elliott, G.P.; Walker, K. J.; Parker, G.C.; Rexer-Huber, K.; Miskelly, C.M. 2020. Subantarctic Adams Island and its birdlife. *Notornis* 67(1): 153–187.

Fischer, J.H.; Bose, S.; Romero, C.; Charteris, M.; Crowe, P.; Parker, G.C.; Ray, S.; Rexer-Huber, K.; Sagar, P.M.; Thompson, D.R.; Bell, E. A.; Debski, I.; Quiñones, J. 2023. Combining tracking with at-sea surveys to improve occurrence and

distribution estimates of two threatened seabirds in Peru. *Bird Conservation International 33:* e41.

Freile, J.F.; Brinkhuizen, D.M.; Greenfield, P.J.; Lysinger, M.; Navarrete, L.; Nilsson, J.; Olmstead, S.; Ridgely, R. S.; Sanchez-Nivicela, M.; Solano-Ugalde, A.; Athanas, R.; Ahlman, R.; Boyla, K.A. 2022. Lista de las aves del Ecuador / Checklist of the birds of Ecuador. Comité Ecuatoriano de Registros Ornitológicos.

Gaskin, C.P.; Harrison, P.; Baird, K.A.; Cunninghame, F.; Ismar, S.M.; Bell, E.A. 2016. An opportunistic sighting of a flock of black petrels (*Procellaria parkinsoni*) at Galápagos Islands, Ecuador. *Notornis 63*: 54–56.

Gianuca, D.; Bugoni, L.; Jimenez, S.; Daudt, N.; Miller, P.; Canani, G.; Silva-Costa, A.; Faria, F. A.; Bastida, J.; Seco-Pon, J.P.; Yates, O.; Serafini, P.P.; Bond, A. 2020. Intentional killing and extensive aggressive handling of albatross and petrels at the sea in the southwestern Atlantic Ocean. *Biological Conservation 252*: 108817

Good, S.D.; Baker, J.B.; Gummery, M.; Votier, S.C.; Philips, R.A. 2020. National Plans of Action (NPOAs) for reducing seabird bycatch: Developing best practice for assessing and managing fisheries impacts. *Biological Conservation 247*: 108592

Haase, B.J.M. 2019. *Guide to the sea and coastal birds of Ecuador, the Ecuasal lakes and the Galapagos Islands*. Guayaquil. Ecuador.

Howell, S.; Lewington, I.; Russell, W. 2014. Rare birds of North America. *Princeton University Press,* Princeton, USA

IUCN 2023. Black petrel. The IUCN Red List of Threatened Species. Version 2022-2.

Merkel, B.; Phillips, R.A.; Descamps, S.; Yoccoz, N.G.; Moe, B.; Strøm, H. 2016. A probabilistic algorithm to process geolocation data. *Movement Ecology 4*(1): 1-11.

Piro, A.; Acosta-Hospitaleche, C. 2019. Skull morphology and ontogenetic variation of the southern giant petrel *Macronectes giganteus* (Aves: Procellariiformes). *Polar Biology 42*(1): 27–45.

Quiñones, J.; Zavalaga, C.; Robertson, C.J.R. 2023. Identifying northern Buller ́s albatross (*Thalassarche bulleri* subsp.*)* in offshore waters of southern Perú. *Notornis 70*: 49–59.

Rexer-Huber, K. 2017. White-chinned petrel distribution, abundance and connectivity have circumpolar conservation implications. PhD Thesis, Otago University. Dunedin, New Zealand.

Reyes, E.M.R.; Suarez-Spin, G.; Bell, E.A. 2017. La Niña signal? Unusual inshore sightings of black petrel (*Procellaria parkinsoni*) in Santa Elena Province, Ecuador. *Notornis 64*: 24–26.

Ridgely, R.S.; Greenfield, P.J.; 2001. *The birds of Ecuador*, vol. 1. Cornell University Press, Ithaca, NY.

Robertson, C.J.R.; Klavitter, J.; McCarthy, R. 2005. Salvin's albatross (*Thalassarche salvini*) on Midway Atoll. *Notornis 52*(4): 236-237.

Robertson, H.A.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A. 2013. Conservation status of New Zealand birds, 2012. (New Zealand Threat Classification Series 4). Department of Conservation. Wellington, New Zealand.

Sagar, P.; Charteris, M.; Parker, G.; Rexer-Huber, K.; Thompson, D.; 2018. Salvin's albatross: Bounty Islands population project. Ground component. National Institute of Water & Atmospheric Research. Wellington, New Zealand.

Taylor, G.A. 2000. Action plan for seabird conservation in New Zealand. Part A, Threatened seabirds. Threatened Species Occasional Publications No 16. Department of Conservation. Wellington, New Zealand.

Thompson, D.; Sagar, P.; Briscoe, D.; Parker, G.; Rexer-Huber, K.; Charteris, M. 2020. Salvin's albatross: Bounty Islands population project. Ground component. National Institute of Water & Atmospheric Research. Wellington, New Zealand.

Wold, J.R.; Robertson, C.J.R.; Chambers, G.K.; Ritchie, P.A. (2018). Phylogeographic structure and a genetic assignment method for Buller's albatross ssp. (*Thalassarche bulleri* ssp.*). Notornis 65*: 152–163.

Wold, J.R.; Robertson, C.J.R.; Chambers, G.K.; Van Stijn, T.; Ritchie, P.A. 2021. Genetic connectivity in allopatric seabirds: Lack of inferred gene flow between northern and southern Buller's albatross populations (*Thalassarche bulleri* ssp.*). Emu - Austral Ornithology 121*(1–2): 113–123.