

around the Juan Fernández archipelago, visiting both main islands, Robinson Crusoe and Alexander Selkirk. In addition to the four *Pterodroma* species that nest in the archipelago (Juan Fernandez Petrel *P. externa*, Stejneger's Petrel *P. longirostris*, Masatierra Petrel *P. defilippiana* and Kermadec Petrel *P. neglecta*), we photographed three Murphy's Petrels *P. ultima*, at sea but relatively close to the islands. The sea surface temperature taken on several days within this period was c.16°C, several degrees above that of the Humboldt Current, which separates this area from the South American mainland.

Bird 1.—Seen at 18h40 on 7 November as we approached Robinson Crusoe from the east (Fig. 1). The location, 33°40.07'S 78°31.44'W, is c.22.5 km from the nearest land. The bird passed the starboard side at speed, made a single loop and then returned in the direction from which it had come. Photographs show a small nick in the primaries of the left wing that distinguishes it from the other two birds.

Bird 2.—Seen at 11h30 on 9 November while drifting off Alexander Selkirk (Fig. 2). The location, 33°58.22'S 81°01.01'W, is c.30.5 km from the nearest land. The bird passed the starboard side at speed and headed on, roughly in the direction of the island.

Bird 3.—Seen at 14h53 on 9 November while drifting off Alexander Selkirk (Fig. 3). The location, 33°54.45'S 81°00.20'W,

is c.22.1 km from the nearest land. The bird also flew past the starboard side in direct travel, heading roughly in the direction of the island. Photographs show apparent differences in the greater primary-coverts in the underwings of birds 2 and 3, distinguishing them from each other and indicating that three separate birds were involved in our sightings.

All were identified by structure, including a fairly slim bill, small squarish head, thick neck, stocky body, relatively short narrowish wings with pointed tips, and longish tapering caudal projection with wedge-shaped tail, as well as plumage, including the overall dark greyish breast to undertail-coverts, slightly paler than the head and neck, creating a hooded appearance, whitish throat patch and base to forehead, and whitish bases to primaries and greater primary-coverts.

Also, in the late afternoon on 8 November, while in transit between Robinson Crusoe and Alexander Selkirk, another dark *Pterodroma*, probably a Murphy's Petrel, was observed but not photographed.

In addition, P. Harrison (pers. comm.), who visited the archipelago every March and November in 1985–1990, observed three single Murphy's Petrels: the first in November 1985 <2 km offshore from Alexander Selkirk, and in November 1989 and November 1990 c.65 km offshore. Howell *et al.*⁵ reported

Three Murphy's Petrels *Pterodroma ultima* off the Juan Fernández Islands, Chile, November 2014

In November 2014, we undertook a three-week yacht-based expedition from central Chile to waters



Figure 1. Murphy's Petrel *Pterodroma ultima*, c.22.5 km east of Robinson Crusoe Island, 7 November 2014 (Angus C. Wilson)



Figure 2. Murphy's Petrel *Pterodroma ultima*, c.30.5 km south-west of Alexander Selkirk Island, 9 November 2014 (Mike Danzenbaker)



Figure 3. Murphy's Petrel *Pterodroma ultima*, c.22.1 km south-west of Alexander Selkirk Island, 9 November 2014 (Mike Danzenbaker)

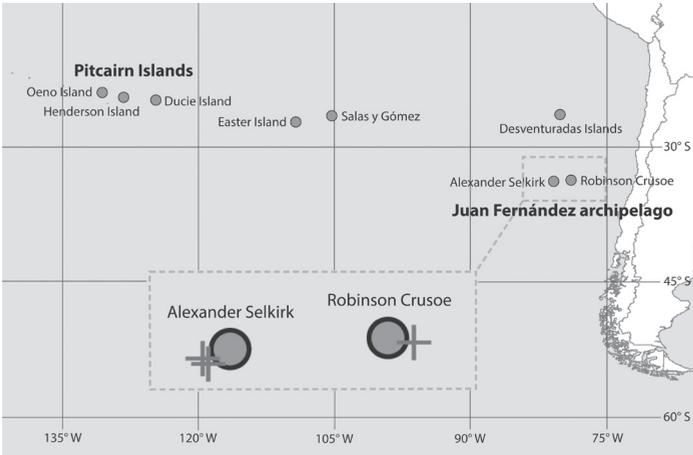


Figure 4. Location of the Juan Fernández archipelago, established breeding sites in the Pitcairn group, recently recognised breeding sites on Easter Island and Salas y Gómez Island, and the South American mainland. Inset shows the positions of the two main islands of the Juan Fernández archipelago, and the crosses the positions of our three sightings.



Figure 5. Alexander Selkirk Island, 10 November 2014; remote, rugged and inaccessible, Alexander Selkirk could easily hold hidden seabird secrets such as breeding Murphy's Petrels *Pterodroma ultima* (Angus C. Wilson)

several Murphy's Petrels roughly in the area 24–31°S 81.5–86°W, north-west of the Juan Fernández group, on 3–4 August 1995 (estimated from map p. 73). One was sighted off the Juan Fernández archipelago on 11 November 2008 by R. White (F. Schmitt *in litt.* 2015).

Range and foraging strategy

Murphy's Petrel nests on several islands in the tropical south-central Pacific, with the principal colonies being on Henderson, Ducie and Oeno in the Pitcairn group^{2,6}. Although nesting dates may vary between islands, most breeding occurs between June and December. In recent years, following rat eradication, the

numbers nesting on Ducie, which is situated in the east of the core breeding range, have grown significantly (P. Harrison pers. comm.). Further rat eradication on Oeno, and perhaps soon on Henderson, is expected to sustain this growth.

Further east, Murphy's Petrel has now been documented breeding in small numbers on Easter Island and on Salas y Gómez Island³. These remote islands lie well east of the Pitcairn group, but are still >2,480 km west-northwest of the Juan Fernández archipelago (Fig. 4). Murphy's Petrel bred in the Motus (offshore islets) on Motu Nui in the 1990s (P. Harrison pers. comm.).

The first documented sighting on mainland Easter Island was made in August 2006 when a dark *Pterodroma*, retrospectively identified as a Murphy's Petrel, was photographed flying over an inland quarry (E. Couve *in litt.* 2015). Subsequently, nesting has been confirmed and displaying birds are now regularly observed on Easter Island, around the offshore islets, and within the larger volcanic craters^{3,7,8}. This represents a recolonisation or overlooked colony, as there are indications from the subfossil record that Murphy's Petrel nested on Easter Island in prehistoric times¹⁰.

Based on the intervals at which male and females exchange nesting duties, Brooke² speculated that off-duty birds might travel considerable distances to forage (incubation foraging and chick provisioning), possibly allowing them to access highly productive areas such as the Antarctic Polar Front, or even the California Current. Similarly, the edge of the Humboldt Current might also offer suitable but distant feeding opportunities, especially to birds from Easter Island and Salas y Gómez Island.

Outside the breeding season, Murphy's Petrel ranges into the north-east Pacific, reaching as far north as the Gulf of Alaska, where the species can be relatively abundant^{1,4}. There is evidence that many complete their moult in these waters before returning to the central Pacific. H. Shirihai (pers. comm.) reported a total of 23 Murphy's Petrels during a three-week voyage in the eastern tropical Pacific in October 2003, between Costa Rica, the Galápagos archipelago, and the northern section of the Humboldt Current as far south as Lima, Peru. These observations support the notion that Murphy's Petrel migrates east toward the Humboldt Current prior to moving north.

The recent sightings off the Juan Fernández archipelago, detailed here, further extend the species' known at-sea range. They also suggest that Murphy's Petrel could colonise the Juan Fernández

archipelago as part of a broader expansion from the core nesting range, although this would be difficult to prove in the rugged terrain of Alexander Selkirk (Fig. 5).

Clearly, Murphy's Petrel is now a strong candidate for inclusion into the South American avifauna as defined by the South American Classification Committee⁹. We trust that this note will encourage observers visiting the south-east Pacific, especially the relatively poorly watched waters far offshore from western South America, including the Juan Fernández archipelago, to be alert for this species and to report further observations. A deeper understanding of the timing of sightings would contribute to understanding the species' range expansion and foraging strategies.

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