

MARINE RECORD

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First record of an Adélie penguin at sub-Antarctic Marion island

Tegan Carpenter-Kling*, John Dickens and Pierre A. Pistorius

Abstract

Background: The sub-Antarctic Prince Edward Archipelago (46°53'S, 37°52'E), consisting of Marion and Prince Edward islands, is situated in the Indian sector of the Southern Ocean, approximately 2 600 km away from the closest Adélie penguin (*Pygoscelis adeliae*) breeding locality, Bouvet Island (54°25'S; 3°22'E).

Methods: Two opportunistic sightings of an Adélie penguin at Marion Island on 28 October 2015 at Ship's Cove and Transvaal Cove, at 9 am and 5 pm respectively.

Results and Conclusions: This is the first record of an Adélie penguin at Marion Island. An Adélie penguin was observed twice on the same day at two separate beaches approximately 2.5 km apart and appeared to be in good health. We assumed that the same penguin has been sighted twice due to the time lapse between the two sightings. Previously, 29 vagrant bird species have been recorded at Marion Island, including chinstrap (*Pygoscelis Antarctica*) and Magellanic (*Spheniscus magellanicus*) penguins. Extralimital sightings of penguins, as observed in this study, could potentially be a result of navigational errors due to severe storms or anomalous ocean conditions acting independently or in concert with other factors such as young age or poor health.

Keywords: Adélie penguin, Vagrant bird, First record

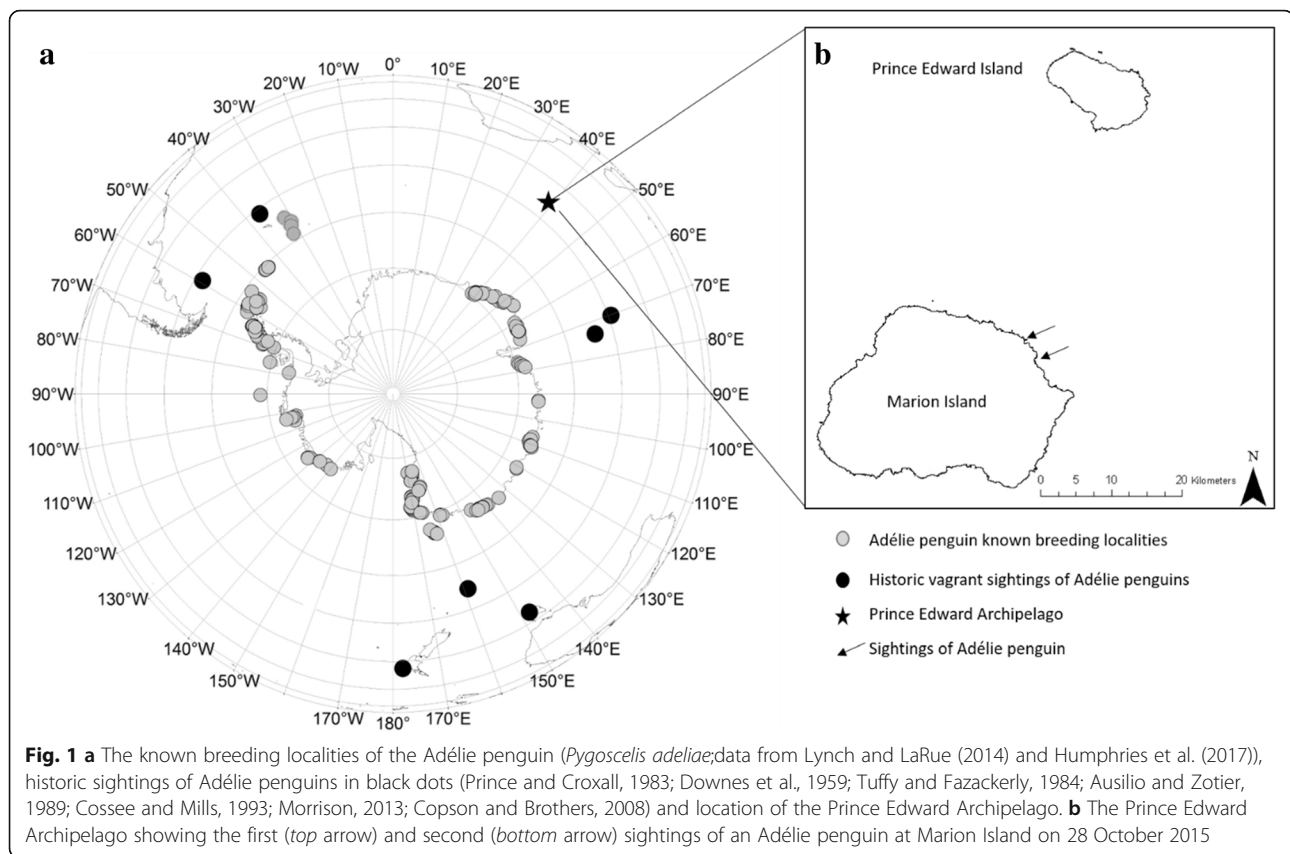
Background

The distribution of the Adélie penguin (*Pygoscelis adeliae*) is closely associated with sea ice around Antarctica. The species has the most southern breeding distribution of any penguin, with a circumpolar distribution (Fig. 1) ranging in latitude between Cape Royds, Antarctic (77°S) and Bouvet Island, sub-Antarctic (54°S; Woehler, 1993; Trathan and Ballard, 2013). With a total of 3.79 million breeding pairs worldwide, their largest breeding aggregations are situated in the Ross Sea (approximately 33% of the global population), the Antarctic Peninsula (approximately 21% of the global population) and east Antarctic (approximately 30% of the global population; Lynch and LaRue, 2014). While incubating eggs or rearing chicks, Adélie penguins forage relatively close to their breeding localities (10-100 km; Lynnes et al., 2002; Ainley et al., 2004) and prey on fish and krill (Ainley et al., 2003). During winter months, Adélie penguins remain within the pack-ice but travel hundreds of kilometres away from their breeding localities (Clarke et al.,

2003; Dunn et al., 2011; Hinke et al., 2015). Sightings of vagrant Adélie penguins (Fig. 1) have been reported from Fortescue Bay, Tasmania (42°51'S 147°58'E; Tuffy and Fazackerly, 1984), Kaikoura, New Zealand (37°45'S 177°55'E; Cossee and Mills, 1993) the Kerguelen archipelago (49°20'S 70°12'E; Ausilio and Zotier, 1989), Pretty Bank Falkland Islands (51°47'S 59°31'W; Morrison, 2013), South Georgia (51°25'S 36°35'W; Prince and Croxall, 1983), Macquaire (54°30'S 158°57'E; Copson and Brothers, 2008), and Heard (54°S 73°30'E; Downes et al., 1959) islands.

The Prince Edward Archipelago lies in the sub-Antarctic region of the southern Indian Ocean and comprises of two islands, Marion and Prince Edward islands. The islands are isolated volcanic outcrops, the closest landfall being the Îles Crozet archipelago about 1000 km to the east. The nearest Adélie penguin breeding colony to the Prince Edward Archipelago is Bouvet Island (54°25'S; 3°22'E), approximately 2 600 km south-west of the archipelago. The islands provide breeding and moulting sites for large populations of pelagic predators, including 28 breeding seabird species and a single land-

* Correspondence: tegan.carpenterkling@gmail.com
DST/NRF Centre of Excellence at the Percy FitzPatrick Institute for African Ornithology, Department of Zoology, Nelson Mandela Metropolitan University, Port Elizabeth, South Africa



foraging bird species, the lesser sheathbill, (*Chionis minor*; Ryan and Bester, 2008).

Since 1987, there have been 101 observations of vagrant birds on Marion Island (46°53'S, 37°52'E) and 29 new species were recorded (Oosthuizen et al., 2009). Here we present the first record of a vagrant Adélie penguin coming ashore on Marion Island.

Methods

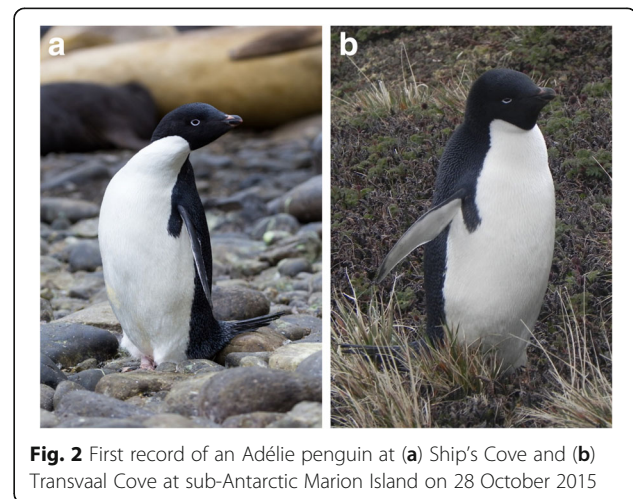
Two opportunistic sightings of an Adélie penguin at Marion Island on 28 October 2015 at Ship's Cove and Transvaal Cove at 9 am and 5 pm, respectively. The bird was photographed from a distance of approximately 20 m.

Results and discussion

On 28 October 2015, a single Adélie penguin was observed loafing on the beach near a group of king penguins (*Aptenodytes patagonicus*) and a harem of Southern elephant seals (*Mirounga leonina*) at Ship's Cove at 9 am (Figs. 1, 2). The penguin appeared to be in good health. After observing the penguin for approximately 15 min the observers left the beach. Later the same day, at 5 pm, a second Adélie penguin was sighted at Transvaal Cove, a beach near the research base on the island, approximately 2.5 km away from Ship's Cove, (Figs. 1, 2). Due to the time

between sightings it is believed that the same penguin was seen twice. Other vagrant penguins have been reported on the island such as the chinstrap (*Pygoscelis Antarctica*; Williams and Burger, 1978; Cooper, 1984; Gartshore, 1987) and Magellanic (*Spheniscus magellanicus*; Oosthuizen et al., 2009) penguins.

Marion Island is approximately 2 600 km from the closest Adélie penguin breeding colony. This is not an



exceptional distance, as previously, vagrants have been observed approximately 500 to 3300 km from the closest breeding colony (Prince and Croxall, 1983; Downes et al., 1959; Tuffy and Fazackerly, 1984; Ausilio and Zotier, 1989; Cossee and Mills, 1993; Morrison, 2013; Copson and Brothers, 2008). Extralimital sightings of penguins, as observed in this study, could potentially be a result of navigational errors due to severe storms or anomalous ocean conditions acting independently or in concert with other factors such as young age or poor health (Woehler, 1992; Gorman et al., 2010).

Conclusion

This is the first recorded sighting of an Adélie penguin at Marion Island. The bird appeared to be an adult and in good health. Previously, vagrant Adélie penguins have been observed much further away from the closest breeding colony (i.e. Kaikoura, New Zealand; Cossee and Mills, 1993) than Marion Island. We suggest that extralimital sightings of penguins may be due to navigational errors acting independently or in concert with other factors.

Abbreviations

E: East; km: kilometres; m: meters; S: South; W: West

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Availability of data and materials

The datasets during and/or analysed during the current study available from the corresponding author on reasonable request.

Author's contributions

TCK Lead and corresponding author, drafted manuscript. JD Sighted and photographed Adélie penguin. PP Principle investigator of a project on Marion Island and provided TCK funding while drafting the manuscript. All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interests.

Consent for publication

Not applicable.

Ethics approval and consent to participate

Not applicable.

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