

Vagrant birds ashore at the Prince Edward Islands, southern Indian Ocean, from 1987 to 2009

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Vagrant birds recorded ashore at Marion Island and Prince Edward Island from 1987 to 2009 are documented. In total, 101 observations (including multiple sightings of potentially the same individual) of 29 species were made. Palaeartic and Holarctic migrants (17 species), African species ($n = 6$) and pelagic species with a predominantly Southern Ocean distribution ($n = 6$) were observed. The number of observations peaked during the austral autumn, which corresponded to both the northward migration of Palaeartic species and maximum observer effort. Ruddy turnstones *Arenaria interpres*, barn swallows *Hirundo rustica*, common house-martins *Delichon urbicum* and cattle egrets *Bubulcus ibis* were most frequently observed; ruddy turnstones and common house-martins apparently increasing in occurrence over the past two decades.

Keywords: avian, Marion Island, Palaeartic migrants, sub-Antarctic, vagrant

Introduction

The Prince Edward Islands in the sub-Antarctic region of the southern Indian Ocean comprise two islands, Marion and Prince Edward (Figure 1). The islands are isolated volcanic outcrops, the closest landfall being the Îles Crozet archipelago about 1 000 km to the east. The nearest continent is Africa, some 1 800 km north-west of the Prince Edward Islands, with Antarctica around 2 000 km to the south. The islands provide breeding and moulting sites for large populations of pelagic predators, including 28 breeding seabird species and a single land-foraging bird species, the lesser sheathbill *Chionis minor* (Ryan and Bester 2008). No introduced birds occur at either island.

Non-marine vagrant birds observed at the Prince Edward Islands have been reported by Burger et al. (1980) for the period 1974–1979, Berruti and Schramm (1981) for 1979–1981, and Newton et al. (1983) for 1981–1983. Additional new species have been reported by Cooper and Underhill (2002; blacksmith lapwing *Vanellus armatus*) and Kritzinger (2009; common moorhen *Gallinula chloropus*). Garthshore (1987) summarised non-breeding seabirds, unusual breeding species and non-marine vagrants from 1947 to 1987, and Ryan (2008) listed most bird species reported at the islands, including their relative abundance or population status. Relatively large numbers of vagrant individuals and species (predominantly Palaeartic migrants, but also African and Antarctic/sub-Antarctic pelagic species) are observed at the Prince Edward Islands compared to

other sub-Antarctic islands within the southern Indian Ocean (Ausilio and Zotier 1989). This study reports on observations of non-breeding seabirds, rare breeding species and non-marine vagrant birds ashore at the islands from 1987 to 2009.

Material and methods

Vagrant birds were opportunistically recorded by field- and base personnel stationed at Marion Island between June 1987 and May 2009, and during brief scientific surveys at Prince Edward Island (e.g. summer surveys of 2001, 2004 and 2008). Offshore observations in the immediate vicinity of the islands are not reported. Records of vagrant birds were included in monthly conservation reports, in accordance with the Prince Edward Islands Management Plan (PEIMPWG 1996), and catalogued by the Marine and Coastal Management (MCM) branch of the Department of Environmental Affairs. Observations of Indian yellow-nosed albatross *Thalassarche carteri*, which breed on Prince Edward Island, are not reported for Marion Island, and only breeding records of black-browed albatross *T. melanophris* and shy albatross *T. cauta* (Ryan et al. 2009) are included. Nomenclature follows Hockey et al. (2005). Birds with global distributions (e.g. cattle egrets *Bubulcus ibis*) are assumed to be of African origin.

Observer effort varies between years as a function of the overwintering team size, hours spent in the field by researchers and the team's general interest in birds. Due to these confounding factors, only broad temporal comparisons

and no statistical analyses have been attempted in this study. Three specimens collected at Marion Island between 1987 and 2009 are stored at the National Flagship Institute's Transvaal Museum in Pretoria.

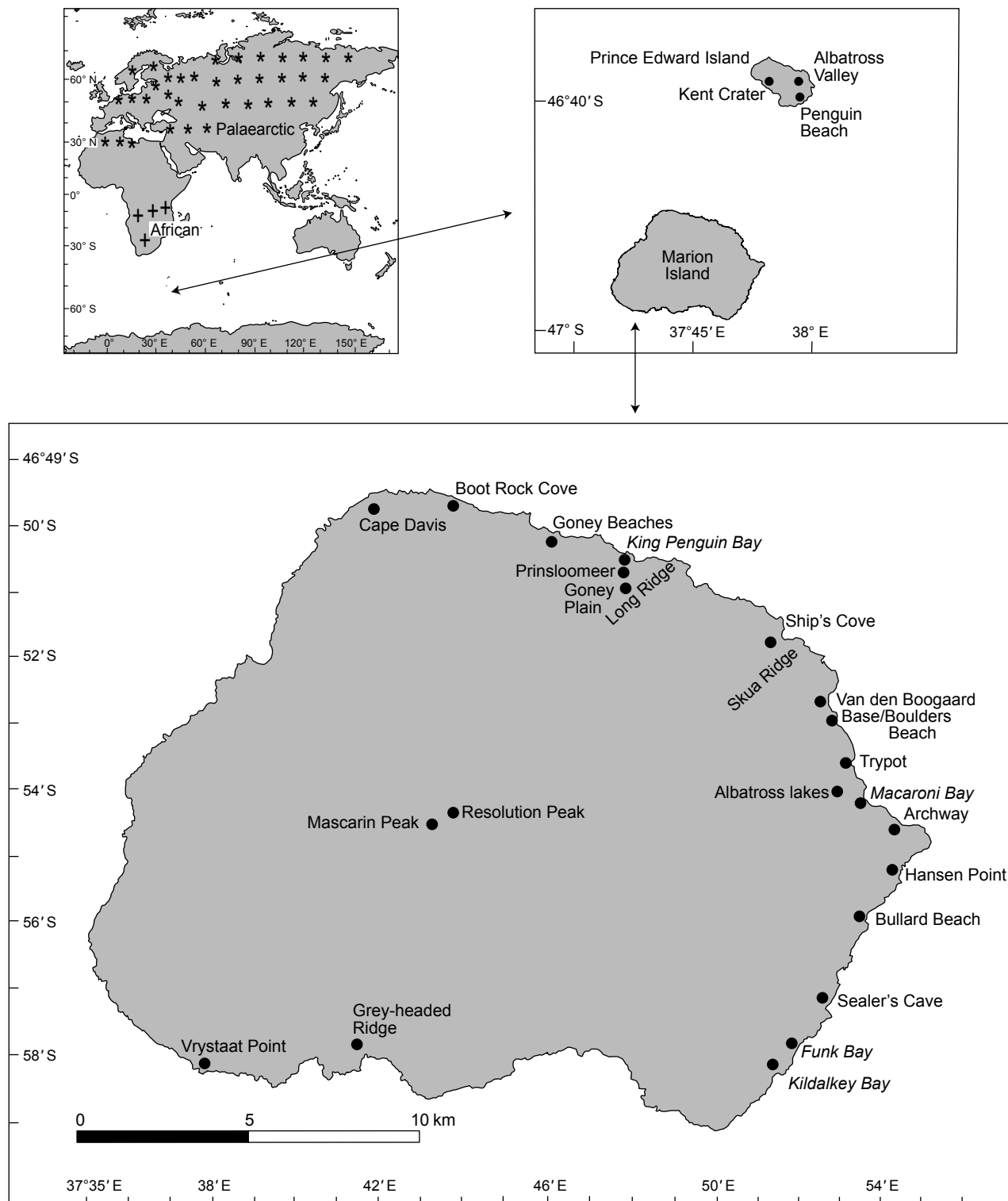


Figure 1: Location of the Prince Edward Islands in the southern Indian Ocean and sites where vagrant bird observations were made. Most vagrants observed at the islands breed in the Palearctic, although several southern African species were observed

Results

In total, 101 observations of 29 species were reported, including eight observations of unidentified birds. A condensed observation list, subjectively grouping multiple observations of the same species within a short period as a single record, resulted in 72 vagrant occurrences. Most vagrants were only sighted once or twice within a short period. However, some observations were made over an extended time frame (months), suggesting that at least some individuals were able to survive during the summer. Nearly all observations ($n = 99$) were made at Marion Island (Tables 1, 2), 34% of which were in the vicinity of the meteorological station (base) and some 88% on the eastern coast of the island, from Goney Beach in the north to Kildalkey Bay in the south. There were large annual variations in the number of vagrants reported. Most observations were made during the austral autumn (April and May), followed by the onset of spring and summer, (September–December; Figure 2). There were few winter records and no vagrants are known to have overwintered or bred at the islands.

In all, seven pelagic species were recorded ashore at the islands (Table 1), including the first known Magellanic penguin *Spheniscus magellanicus* record. All of the species have a Southern Ocean distribution, except for Arctic

terns *Sterna paradisaea*, which are Holarctic migrants. Two uncommon breeding species were recorded, a shy albatross that bred at Prince Edward Island in 2008 (and another possible record at Marion Island in 1990) and a black-browed albatross that attempted breeding at Grey-headed Ridge, during a period of at least four years. A total of 22 terrestrial species, including eight previously unrecorded (before 1987) species, was observed (Table 2). Most terrestrial species ($n = 14$) are migrants that breed in the Palearctic biogeographic region and migrate through Europe and the Mediterranean to sub-Saharan Africa (for most species including southern Africa) during the boreal winter. Two Holarctic migrants, ruddy turnstone *Arenaria interpres* and pectoral sandpiper *Calidris melanotos*, and six African species, which included three egret (Ardeidae) species, were observed.

Discussion

The considerable skewness in observer effort precludes accurate assessment of the frequency of species observations around Marion Island, both spatially and temporally. Most observations were made in close vicinity of the meteorological station or on the eastern (leeward) side of the island. Although this distribution makes biological sense,

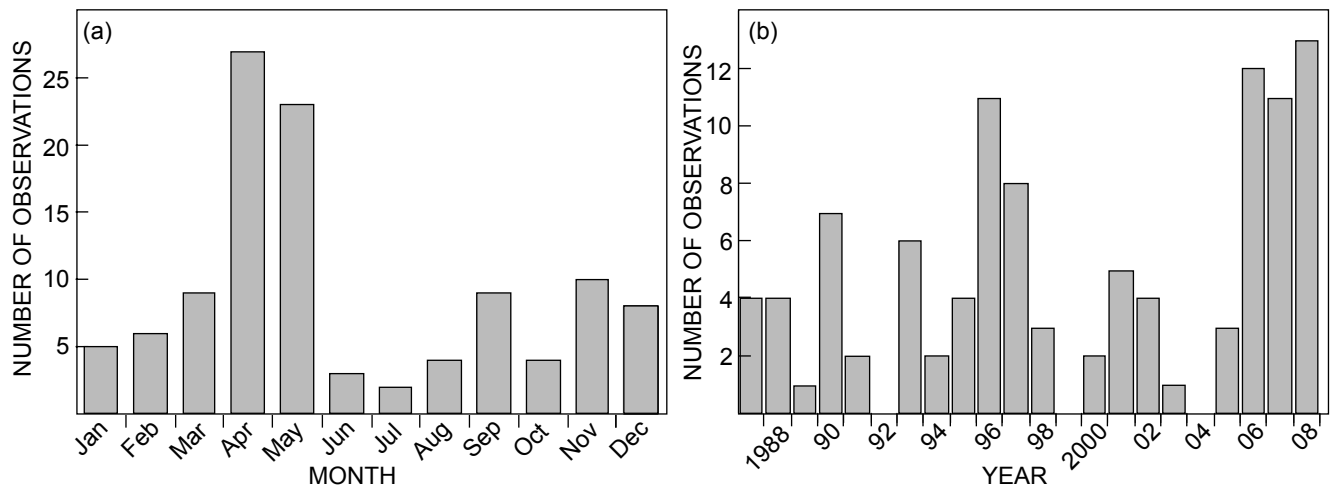


Figure 2: (a) Monthly and (b) annual (June_(t)–May_(t+1)) distribution of observations (1987–2009) of vagrant and rare breeding birds at the Prince Edward Islands

Table 1: Pelagic vagrant and rare breeding bird species ashore at the Prince Edward Islands from 1987 to 2009. Text in bold signifies a species that was not observed prior to 1987 (Garthshore 1987)

Species	Observation dates
Chinstrap penguin <i>Pygoscelis antarcticus</i>	January 1989
Magellanic penguin <i>Spheniscus magellanicus</i>	February 2006
Shy albatross <i>Thalassarche cauta</i>	September 1990 ⁺ , December 2008 ^{**}
Black-browed albatross <i>Thalassarche melanophris</i>	November 2000 ⁺ , November 2002 ⁺ , November 2006 ⁺ , December 2008 ⁺
Southern fulmar <i>Fulmarus glacialisoides</i>	September 1990, October 1990, September 1991
White-headed petrel <i>Pterodroma lessonii</i>	November 1997
Arctic tern <i>Sterna paradisaea</i>	April 1998

⁺ Breeding

^{*} Observed at Prince Edward Island

Table 2: Terrestrial vagrant bird species ashore at the Prince Edward Islands from 1987 to 2009. Text in bold signifies species that were not observed prior to 1987 (Garthshore 1987). Superscripts following species' names refer to post-1987 publications: ^aIrwin (1989), ^bCooper and Underhill (2002), ^cRyan (2008), ^dKritzinger (2009). Numerical superscripts indicate the number of birds observed (if more than one). Three Transvaal Museum specimens are indicated. Multiple entries of the same observation date reflect multiple records for that month and year

Species	Observation date and number observed
Little egret <i>Egretta garzetta</i>	April 2007, April 2008
Yellow-billed egret <i>Egretta intermedia</i>	March 2003 ²
Cattle egret <i>Bubulcus ibis</i>	April 1989, April 1991, April 1994, April 1997, May 1997, May 1997, May 1997*, April 1999, April 2007
Corn crane <i>Crex crex</i>	April 1998
Common moorhen <i>Gallinula chloropus</i> ^d	October 2008
Common ringed plover <i>Charadrius hiaticula</i>	March 2007
Blacksmith lapwing <i>Vanellus armatus</i> ^b	December 2001*
Ruddy turnstone <i>Arenaria interpres</i>	November 1988, April 1997, June 1997, July 1997, [...] 1998, January 1999 ² , July 2006, September 2006, September 2006, November 2006, December 2006 ² , February 2007 ² , November 2007 ² , January 2008 ³ , March 2008 ³ , April 2008 ³ , August 2008 ³ , September 2008 ³
Terek sandpiper <i>Xenus cinereus</i>	November 2003
Common greenshank <i>Tringa nebularia</i>	October 1994
Curlew sandpiper <i>Calidris ferruginea</i>	October 1997
Pectoral sandpiper <i>Calidris melanotos</i>	February 2008, March 2008
European turtle-dove <i>Streptopelia turtur</i> ^c	December 1987, January 1988, March 1988 ⁺ , December 1990 ⁺ , January 1999
Common cuckoo <i>Cuculus canorus</i> ^{ac}	December 2008
Barn swallow <i>Hirundo rustica</i>	May 1990, April 1991, March 1994 ⁺ , May 1994, May 1995, May 1996, May 1996*, May 1997 ² , May 1997*, June 2000, May 2002, September 2002, June 2005, November 2005 ³ , April 2007, April 2009 ² , April 2009
Common house-martin <i>Delichon urbicum</i> ^b	May 1994, May 1994, May 1994, May 1996, May 1996, May 1997, November 2006, April 2009
Brown-throated martin <i>Riparia paludicola</i> ^c	August 1996, August 1996
Eurasian golden oriole <i>Oriolus oriolus</i>	December 1990
Common whitethroat <i>Sylvia communis</i> ^c	May 1997
Willow warbler <i>Phylloscopus trochilus</i>	April 1998
Yellow wagtail <i>Motacilla flava</i>	August 2007, September 2007, April 2009, April 2009
Grey wagtail <i>Motacilla cinerea</i>	April 2008
Unidentified owl	September 1991
Unidentified egret	March 2002, March 2002
Unidentified passerines	March 1988, April 1989, May 2003, February 2008, May 2009

* Observed at Prince Edward Island

⁺ Transvaal Museum specimens

in that birds avoided the windward western coastline of the island, it is equally likely to be caused by high observer effort near the base and low observer effort in the western coastal areas. Similarly, although the increased number of observations in autumn may reflect the incidence of vagrancy associated with migrating species, it could also partially be attributed to an increase in observer effort associated with the annual changeover of overwintering teams at Marion Island.

Despite variable temporal and spatial observer effort, some species appear to have become more common during the study period. Common house-martins *Delichon urbicum*, a previously unrecorded species at the islands, were observed on eight occasions since 1994 (likely to be four individual occurrences). This species is a Palaearctic migrant and was almost exclusively seen during the autumn in May (it was observed once in November). Barn swallows *Hirundo rustica* are one of the most frequently observed vagrant species at the islands (17 sightings of some 14 individuals). However, it is difficult to assess whether they have increased in incidence during the study period as they were regularly

recorded in earlier studies. Ruddy turnstones are relatively common vagrants to sub-Antarctic islands and there are five Marion Island records (1947–1987; Garthshore 1987, Ausilio and Zotier 1989). From 1987 to 2009, ruddy turnstones were observed on 18 occasions (nine independent occurrences), with regular sightings between 2006 and 2008. Small flocks of 2–3 individuals have been found to survive for months during three consecutive summers (2006–2008). The birds observed in these summers were probably absent rather than overlooked during the interim winter period. On Marion Island, ruddy turnstones prefer the open coastal mire complex that is typical of Goney Plain and the areas behind King Penguin Beach, where they forage by turning over pieces of mire vegetation. It is uncertain whether the invertebrate biomass in the mire complex could support birds in entirety. A more likely, and abundant, source of food could be the limpet *Nacella delesserti*, which is commonly associated with the intertidal zone (Blankley and Branch 1985), where ruddy turnstones have also been observed. Nonetheless, their prolonged presence during the summers of 2006–2008 suggests that they maintain condition on the

available invertebrate biomass and that they successfully evade predation or do not attract the attention of predators, such as Subantarctic skuas *Catharacta antarctica*, as do some other vagrant species (e.g. egrets). Individuals observed in January 2008 were starting to moult into breeding plumage, as also observed in some late-season birds in southern Africa (Hockey et al. 2005). One individual attained full breeding plumage by 31 March 2008.

A juvenile Magellanic penguin was observed at Marion Island in February 2006. This species has a southern South American distribution (Chile, Argentina and Falkland Islands), and although foraging is largely restricted to the continental shelf, vagrants have been sighted as far as Tristan de Cunha and South Africa (Hockey et al. 2005). A male grey wagtail *Motacilla cinerea* was observed feeding in the intertidal zone of Boot Rock Cove (presumably on small invertebrates such as the wingless kelp fly *Paractora dreuxi*) on two consecutive days in April 2008. Grey wagtails are Palaearctic migrants to western and eastern sub-Saharan Africa, but they usually do not occur farther south than Malawi, with few vagrants recorded in southern Africa (Hockey et al. 2005). Although European turtle doves *Streptopelia turtur* were not confirmed prior to 1987 at the Prince Edward Islands, five previous records of unidentified doves (Garthshore 1987) may refer to this species. Two specimens were collected at Marion Island in 1988 and 1990, and are now part of the Transvaal Museum collection.

The Prince Edward Islands are not located along terrestrial bird migratory routes and do not provide resting or wintering grounds for any migrant species. The observations of terrestrial species are therefore typically of vagrants (individuals occurring far outside their normal range) and not of migrants or seasonal transients en route. The weather, and wind in particular, may influence bird migration. The prevailing weather systems between South Africa and the Prince Edward Islands consist of cyclonic systems and cold fronts that sweep over the area in a north-easterly direction. The prevailing and strongest winds recorded at Marion Island are north-westerly (i.e. in the direction from Africa [le Roux 2008]) and, according to this 'weather hypothesis', such winds could assist in blowing birds towards the islands (Burger et al. 1980). Alternatively, the 'reverse migration hypothesis' (Pfeifer et al. 2007) may explain the relative abundance of vagrant Palaearctic migrants observed at Marion Island, especially during the autumn (northward) migrating season (e.g. barn swallows, common house-martins and grey wagtail). By this hypothesis, birds migrate on a route that is in the opposite direction from their habitual, or 'correct', route. Birds departing from southern Africa during autumn may therefore incorrectly head southward. Ship-assisted vagrants or 'hitch-hiking' (e.g. Lee and Chown 2007) with relief vessels is unlikely (for birds) given current stringent management controls (PEIMPWG 1996) and the likelihood that such birds would have been noticed aboard ships.

Not all vagrants arriving at the Prince Edward Islands will be observed or reported after being sighted. Many rare pelagic species will be overlooked by non-expert observers due to the difficulty in distinguishing closely related species from the local avifauna (e.g. prions and terns) and on account of their nocturnal behaviour (e.g. petrels). Terrestrial species may be more obvious to casual observation. However, even

these may be subject to misidentification. The identification of sighting records for which there are no comprehensive field notes or photographs for verification is open to some degree of doubt. This is a limitation in the present study as often little information regarding observations made in the 1980s and 1990s was available. As most island personnel are not specialist bird observers (limiting the use of descriptive field notes), we encourage the use of photographic evidence to verify field identification. In addition to identification, photographic data may be used to determine the sex, age-class, condition and breeding status of vagrants.

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