



Birds Australia Rarities Committee Unusual Record Report Form

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Species Name: Broad-billed Prion	Scientific Name: <i>Pachyptila vittata</i>
Date(s) and time(s) of observation:	31 August 2013; 8.35am
How long did you watch the bird(s)?	Observed twice for about 10-15 seconds over a 90 second interval.
First and last date of occurrence:	31 August 2013
Distance to bird:	50-100m

Site Location: Continental shelf break off Eaglehawk Neck, TAS
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Habitat: Offshore, just inside the continental shelf break
Sighting conditions: Good light conditions, clear visibility. See attached images.
Optical aids used: Swarovski 10x50, Leica 12x50 BA and other similar binoculars; Canon 7D/Canon 400 mm, f5.6 (RWS) and Canon 5D mk III (KB)

Were other observers present? Do any of the other observers disagree with your identification? Martin Cachard, Robert Hamilton, Judith Hoyle, Gavin O'Meara, John Weigel, Ed Williams, and Richard White. Also aboard were the skipper, John Males, and deckhand, Michael Males. Nobody disagreed with the ID.
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To your knowledge, is the species seen frequently at this site? I believe this may be one of the closest live occurrences to Eaglehawk Neck although it is regular on the seamounts to the south of Tasmania and there are at least eight records of beach-washed birds from Tasmania (probably more). However, live sightings from the Australian mainland or Tasmania remain extremely rare (with fewer than 10 accepted BARC records [#154, #369, #395, #490, #507, #532, #649, #708, #726]).
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Did you use a field guide? The bird was tentatively identified in the field (from digital images) without using a field guide. References used subsequently to prepare this report were: COX, J.B. (1980). Some remarks on the breeding distribution and taxonomy of the Prions (Procellariidae: Pachyptila). Rec. S. Aust. Mus. 18 (4): 91-121. • MARCHANT, S. & P.J. HIGGINS (eds) (1990). Handbook of Australian, New Zealand and Antarctic Birds. Volume 1: Ratites to Ducks. Melbourne. • ONLEY, D. & P. SCOFIELD (2007): Albatrosses, Petrels & Shearwaters of the World. Princeton. • SHIRIHAI, H. (2007, 2 nd ed.): A Complete Guide to Antarctic Wildlife. London.

How confident are you of your identification? 100%
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Other details: We stopped for a large flock of approximately 2000 Fairy Prions at the 60-fathom line. While scanning the flock for rarer prion species and allies, the Broad-billed Prion flew past the boat.

Physical Description

Summary description:

(1) **Number:** one individual was observed.

(2) **Age, sex:** uncertain

(3) **Size and shape:** Large, front-heavy prion with a particularly prominent and steep forehead. Noticeably larger and longer-winged than accompanying Fairy Prion. Overall bulky jizz with a large, broad and particularly deep and dark bill. However, surprisingly the bill seemed relatively short compared to the head – this is likely due to the extremely large-looking head and to a lesser degree to the very broad and deep nature of the bill thus giving the appearance of a shorter bill than it probably was.

(4) **Plumage colour and pattern:** Basic - prion plumage. Overall darker head, particularly dark grey crown, ear coverts and very extensive dark collar and slightly paler grey lores. The very dark head (almost blackish from some angles) was the first thing that several of us noticed (although it does not appear as dark in some of the photos as it seemed in the field). The white supercilium was relatively narrow and extended from just in front of the eye to the rear edge of the ear-coverts. The 'clean' white appearance of the supercilium is enhanced by the very dark ear coverts (slightly darker than the rest of the head). There was also a very distinctive and moderately broad dark grey 'bridle' linking the dark ear coverts to the upper mandible thus enclosing a small white cheek patch (referred to as a 'dark sub-orbital stripe running from proximal third of lores to ear coverts' in HANZAB). The dark grey collar extended roughly two-thirds around the neck and at some angles looked almost complete in the field. Upperpart coloration was quite bluish grey, darker than the typical whalebird, approaching the blueness of a Fairy Prion but darker (certainly noticeably darker than Slender-billed Prions and also most Antarctic Prions). The typical prion 'M' marking across the wings was pronounced, dark and well defined. The black tail band was relatively extensive, nearly extending to the upper tail coverts (almost approaching some Fairy Prion for definition). The black undertail coverts are also particularly prominent – extending from a terminal band forward through the central part of the undertail.

(5) **Bill shape and structure:** Most of the discussion on the bill shape and structure is based on study of the digital images. Although a very large bill was noted in the field, the distance to the bird did not allow for any great detail to be noted. From photos: the bill is extremely deep-based (note the significant bill depth as measured from the base of the nostrils on the images attached below) with a heavy curvature towards the nail of the bill (maxillary unguis). We did try to compare the ratio of bill length to bill depth (from figure 3) to the measurements listed in HANZAB (other sources list only bill length and width but not depth). We acknowledge that this is a very crude ('back-of-the-envelope') comparative technique but with care and due consideration of the issues with making measurements from digital images, useful morphological ratios can sometimes be obtained. In HANZAB the bill length to depth ratios for the populations from the three Snares and Chatham Island sources come out at 1.98, 1.98 and 2.02. The measurements from the Whero Island sources show a ratio of 2.67 and 2.76 – these birds have considerably shallower bill bases. Our crude measurements show a ratio of 2:1 for the bill length to depth; this is in close agreement to the Snares and Chatham Island populations. The maxillary unguis appears to be relatively small compared to the rest of the bill and does not project above the profile of the upper bill surface. There is a large curvature along the cutting edge of the latericorn, especially at the base of the bill, but also along the entire edge of the bill. This almost gives the impression of the bird 'smiling'. The lower edge of the bill is also quite curved and in some photos shows a protruding lower surface (this is probably the gular pouch which is often inflated in prions and easiest to see on Broad-billed Prions which have a larger basal surface area to be expanded/inflated). Unfortunately the photos do not show the bill fully front-on, which would make identification more straight-forward. However, the images that are closest to front-on do indeed show a very broad bill although probably not as extreme as some individuals. The real/true breadth of the bill is thus hard to determine.

(6) **Colour of bill, eyes and legs/feet:** Bill colour was two-toned. The upper mandible (particularly the top of the upper mandible) appeared black/blackish from most angles. The sides of the lower mandible were dark blue (except perhaps the mandibular unguis). It is erroneous to think that the entire bill of a Broad-billed Prion must be black. Whilst researching this submission, we have found many photos of Broad-billed Prions and many/most do not show an entirely black bill. Most have grey or blackish bills with bluish sides to the latericorn and lower mandible. The eyes were dark. The legs appear dull blue/grey; the feet were not observed.

(7) **Behaviour, movements, flight pattern, feeding, interactions with other birds, comparisons with other species:** During the brief views, the bird's flight was considered to be slightly less dynamic than the Fairy Prions also present but there was nothing about the behavior that could be considered diagnostic or particularly different to our previous experiences of other Whalebirds in flight. It was not seen for long enough to really appreciate any subtle differences such as longer glides.

Photos



Figure 1: Broad-billed Prion, 31 Aug 2013, note dark upper mandible, extensive dark grey neck sides, bulky overall jizz, steep forehead and large-headed appearance (particularly in the right hand photo). Photos: Kevin Bartram.



Figure 2: Broad-billed Prion, 31 Aug 2013, same image (right hand image is brightened only, no tonal changes). Note dark and broad upper mandible, deep bill base, large head with dark crown and ear coverts, longish wings and relatively extensive dark tail tip. Photo: Kevin Bartram.



Figure 3: Broad-billed Prion, 31 Aug 2013, note the deep-based bill with black upper mandible and mostly blue lower mandible, the extensive dark blue-grey collar, steep forehead, dark ear coverts and lores, well defined but relatively short white supercilium and the grey 'bridle' linking the ear coverts to the upper mandible. It is considered that the extremely deep bill base is probably outside the range for both Salvin's and MacGillivray's Prions. Photo: Raja Stephenson.



Figure 4: Broad-billed Prion, 31 Aug 2013, again note the deep bill base and the convex profile to the lower mandible (inflated gular pouch). Also note the repetition of the grey 'bridle' on the left side of bird's head and the dark ear coverts and collar. Photo: Raja Stephenson.



Figure 5: Broad-billed Prion, 31 Aug 2013, note the long-winged, large-headed and relatively bulky jizz. Photos: Raja Stephenson.

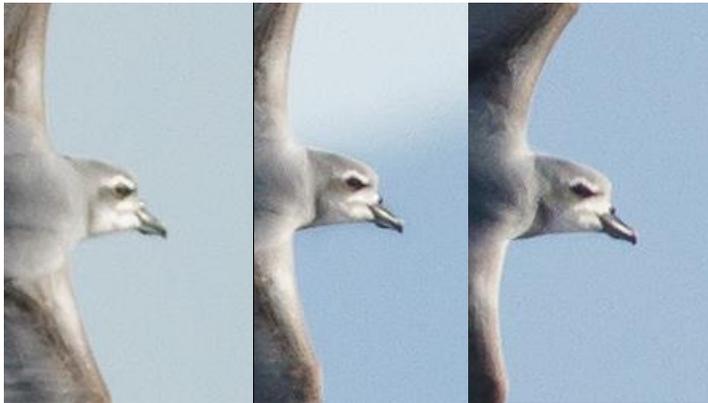


Figure 6: Broad-billed Prion, 31 Aug 2013, crops of the same photos as Figure 5. Note the deep bill base and the convex lower mandible. The upper mandible does not seem as dark in these images as in the preceding images but at least part of this is assumed to be reflected light. Photos: Raja Stephenson.

Other species seen: Fairy Prion 2000+ (1000 max count at one time). Wandering Albatross, Northern Royal Albatross, Southern Royal Albatross, Shy Albatross, Salvin's Albatross, Black-browed Albatross, Campbell Albatross, Indian Yellow-nosed Albatross, Great-winged Petrel (gouldi & macroptera), Providence Petrel, White-headed Petrel, Soft-plumaged Petrel, Grey-backed Storm-petrel, Common Diving-Petrel, Northern Giant Petrel, Sooty Shearwater

Other species with which you think it might be confused and how these were eliminated?

Prions are a notoriously difficult group to separate at sea. However we believe the quality of the photographs allows us to eliminate all the confusion species in this case.

Fairy Prion – easily distinguished by smaller size, larger black tail band, considerably smaller, paler bill and much shorter and less distinct paler grey collar.

Slender-billed Prion – again easily distinguished by considerably finer bill, longer white supercilium, finer dark stripe through ear coverts, paler grey ground colour to the upperparts (much less bluish than in other prions), more washed out 'M' pattern across wings and much reduced dark tip to tail.

Antarctic Prion – relatively easily distinguished by the typically less prominent grey collar (although Antarctic Prions show some variability of this feature), and the substantially finer and bluer bill (both bill depth and width are reduced). Even the largest-billed Antarctic Prions do not approach the dimensions of the bill on the observed bird or the mostly

blackish upper mandible. Antarctic Prion bills differ further in lacking curvature of the upper and lower surfaces and of the cutting edge and by showing a prominently raised maxillary unguis (nail). Furthermore, the overall darker appearance of the bird, the very large head, the thick black tail band, bluer plumage tones and distinctive malar bridle all discount Antarctic Prion.

Salvin's Prion – distinguishing this taxon is more problematical as it widely considered that most texts are incorrect in stating the bill is always blue rather than black/dark grey. Although many (or most) Salvin's Prions do indeed have blue/bluish bills, it would appear that some may have very dark grey upper mandibles and KB considers that it may be the larger-billed individuals that are more prone to having darker bills. However, KB also notes that from his observations of Salvin's Prions that although they may have a darker upper mandible, this is usually slate grey not black (although they may appear blackish from some angles in the field). All our images of the submitted bird show a black upper surface to the upper mandible with a bluer lower mandible. Furthermore, Salvin's Prion often display a less prominent grey collar, typically a finer black tail band, narrower and typically bluer upper mandible and the overall finer bill base/bill depth. The extremely deep bill of the observed bird (length to depth ratio 2:1) is considered to lie outside the range for Salvin's Prion. It is also considered that the relatively short white supercilium and darker lores are pro- Broad-billed Prion features and that a Salvin's Prion would typically show a longer white supercilium and paler lores.

It is considered that the bill of a Salvin's Prion may look proportionally longer than Broad-billed Prion due to the shallower base to the bill, the narrower width and their relatively smaller-headed appearance. Although there is much variation in the width of Salvin's Prion bills they all seem to have this long, slender profile in common. The prominent curvature of both the sides of the bill (see Figure 2) and of the upper and lower mandibles (Figures 3 & 5) are also used to distinguish from most Salvin's Prions. Particularly the curvature of the cutting edge which seems to be fairly consistent along the length of the bill on the observed bird and more than would be expected of a Salvin's Prion (where the curvature of the cutting edge is greater towards the gape). The curved lower mandible of the observed bird also seems to be consistent with many images of Broad-billed Prions and at odds for most Salvin's Prions – which should not be as deep, curved or broad at the gonys. The conspicuous grey 'bridle' that is noted for the observed bird can also be clearly seen on other definitive photos of Broad-billed Prions and is considerably stronger and more pronounced than on any Salvin's Prion images that we can find.

In summary, the very dark and large head, the notably deep-based and mostly blackish bill, the particularly prominent grey neck sides, the distinctive grey malar bridle, the strongly and evenly curved lateral, upper and lower bill profiles and the broad black tail tip are all considered to distinguish the observed bird from Salvin's Prion.

MacGillivray's Prion – relatively little is known about the at-sea identification of this very rare species. This is clearly the hardest taxon to differentiate from Broad-billed Prion and it may not always be possible to distinguish all individuals at sea. Indeed the taxonomy is complicated, and MacGillivray's Prion has previously been lumped with Broad-billed and Salvin's Prions. However, it is an extremely rare species that breeds in the southern Indian Ocean and it has not previously been recorded from Australia (although one each washed specimen in the WA museum may be this species – Jeff Davies pers. comm.). This taxon is tentatively distinguished by the narrower bill base (the extremely deep bill base of the observed bird is considered to possibly lie outside the range for MacGillivray's Prion – see the above comments on bill ratios), occasionally bluer upper mandible (although dark upper mandibles also seem common for this species) and the lack of the grey 'bridle' facial pattern (unknown to our knowledge for this taxon). It is also considered that this species may display a more slender and longer bill profile than the very deep and apparently short bill profile of the bird detailed herein (the apparently short bill length of the observed bird is no doubt enhanced by the very large head and deep bill base; it may not be particularly short at all). Some authors suggest that MacGillivray's Prion has a shorter black tail tip than Broad-billed Prion, thus the extensive black tail tip of the observed bird is also considered favourable for identifying the bird as a Broad-billed Prion. The location of the sighting and the extreme rarity of MacGillivray's Prion must also be considered.

Was the description written from notes and/or sketches made (tick box):

during the observation or; shortly after the observation or; from memory; with the aid of the photographs

Please indicate supportive evidence available.

Was the bird: photographed, taped or video taped? If yes to any of these, by whom? RWS & KB
RWS's photos can be seen here: <http://www.adarman.com/Pelagics/Tasmania-Pelagics/2013-Aug-31>

What experience have you had with the species in question?

DM has no experience of Broad-billed Prion but has seen many Antarctic and Slender-billed Prions off Tasmania, New South Wales and South Australia. He has organized and led pelagic trips from New South Wales, South Australia and Tasmania and participated in many more from Queensland, Western Australia, Ireland and South Africa.

KB has extensive experience of Antarctic, Slender-billed, and Salvin's Prion from pelagic trips off Australia, survey vessels travelling to the Antarctic, and from examining thousands of beach-washed specimens and skins in museum collections of all species of prions.

NKH has extensive experience with seabirds having been pelagic trip leader on many trips off New South Wales, Tasmania, California, New Jersey/New York and Delaware/Maryland and having participated on many pelagic trips off North Carolina, Galapagos, Queensland, South Australia and New Zealand. NKH has been an active member of the Rare Birds Committees of New Jersey (USA), Hessen and Schleswig-Holstein (both Germany). NKH had never seen a Broad-billed Prion before, however he is very familiar with Antarctic and Slender-billed Prion from observations off TAS, NSW, QLD and SA and has also observed Salvin's Prion on a single occasion off Sydney, NSW.

RWS has extensive experience with seabirds having participated on many pelagic trips off New South Wales, Tasmania, Queensland, South Australia, New Zealand, North Carolina, New Jersey/New York and Delaware/Maryland. RWS had never seen a Broad-billed Prion before, but she is very familiar with Antarctic and Slender-billed Prion from observations TAS, NSW, QLD and SA and has also observed Salvin's Prion on a single occasion off Sydney, NSW.

Signature: Dan Mantle

Date: 13 December 2013