

 <p>Agreement on the Conservation of Albatrosses and Petrels</p>	<p style="text-align: center;">Seventh Meeting of the Advisory Committee <i>La Rochelle, France, 6 - 10 May 2013</i></p> <p style="text-align: center;">Report of the Taxonomy Working Group</p> <p style="text-align: center;"><i>Taxonomy Working Group - M.C. Double, M. Brooke, G.K. Chambers, D. Montalti, P.G. Ryan and M.L. Tasker</i></p>
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1 SUMMARY

The Black-footed Albatross (*Phoebastria nigripes*) species was listed under Annex 1 of the Agreement on the Conservation of Albatrosses and Petrels (ACAP) in 2009 (ACAP [MoP3 Final Report](#)). This report presents the application of the taxonomic guidelines developed by the ACAP's Taxonomy Working Group to this species as requested by the **last meeting of the Advisory Committee** ([AC6 Report Rev 1.2](#)).

After reviewing the published, taxonomy-related data for Black-footed Albatross the Taxonomy Working Group concluded that the available information do not warrant an amendment to the species currently listed under Annex 1 of the ACAP Agreement.

2 INTRODUCTION

Article IX 6 (b) of the Agreement on the Conservation of Albatrosses and Petrels (ACAP) requires the Advisory Committee to “endorse a standard reference text listing the taxonomy and maintain a listing of taxonomic synonyms for all species covered by the Agreement”. This statement reflected the then state of flux in the taxonomy of Procellariiformes and, in particular, of albatrosses.

[Resolution 1.5](#) of the First Session of the Meeting of the Parties (MoP1) to ACAP provides for the establishment by the Advisory Committee of a Working Group on the taxonomy of albatross and petrel species covered by the Agreement.

The objective of the Taxonomy Working Group (TWG) was to establish a transparent, defensible and highly consultative taxonomic listing process. The Scientific Meeting that preceded the first meeting of Parties (MoP1; ScM1; Section 4.3) stated that “...given the importance that species

lists have upon conservation policy and scientific communication, taxonomic decisions must be based on robust and defensible criteria. It is important to resolve differences in a scientific and transparent manner with appropriate use of peer-reviewed publications.”

The Terms of Reference for the TWG are presented in previous Working Group reports as are the guidelines developed for taxonomic decision-making ([AC2 Doc 11](#)) based on those described by Helbig *et al.* (2002) of the taxonomic sub-committee of the British Ornithologists' Union. These guidelines facilitate the assessment and assimilation of potentially influential studies while guarding against poor science. The guidelines consider the inevitable limitations of species lists and the benefits of taxonomic stability.

Following the listing of black-footed albatross by ACAP in 2009 the meeting of AC6 (2011) recommended that the TWG 'should consider whether populations of Black-footed Albatrosses nesting in Japan and Hawaii are separate biological units (subspecies).'

3 REVIEW OF TAXONOMIC DATA AND JUSTIFICATION OF TAXONOMIC DECISIONS

3.1 *Black-footed albatross (Audubon 1839)*

3.1.1 Recent taxonomic history

Recent changes to the taxonomy of this taxon have been associated with its generic standing. It was originally placed within the genus *Diomedea*, then *Phoebastria*, then back into *Diomedea* (Mathews, 1948) then returned to *Phoebastria* again following phylogenetic analyses (Nunn *et al.*, 1996). No subspecies have been described, however, a molecular study by Walsh and Edwards (2005) showed significant population genetic differentiation between Hawaiian and Japanese colonies (see below).

3.1.2 Primary publications or reviews of data relevant to this review

This brief review focuses on the information available to assess the appropriate taxonomic status of the Hawaiian and Japanese colonies of Black-footed Albatross.

1. Walsh and Edwards (2005) generated cytochrome-b sequence data for 85 individuals from three Hawaiian colonies (French frigate Shoals, Laysan Island, Midway Atoll) and 55 individuals from the Izu Islands Japan. In short they found that the one sequence type (haplotype) was by far the most frequent in the Hawaiian colonies (>0.8) was very rare among Japanese birds (<0.02). The haplotype common in Japan was rare or absent from the Hawaiian colonies (<0.03). Not surprisingly these data suggest the Japanese and Hawaiian colonies are significantly differentiated at this locus but there was no differentiation within the Hawaiian islands.
2. Eda *et al.* (2008) expanded the Walsh and Edwards study to include 50 samples from Japan's Bonin Islands (western North Pacific). The authors suggested that these islands

may be more representative of the western Pacific colonies as those birds from the Izu Islands are likely to be the 'result of relatively recent re-colonisation, or have increased following a severe population bottleneck.' This study found the haplotype common on Izu was also common in the Bonin colonies (0.9) and therefore were also strongly differentiated from the Hawaiian colonies.

Although these two studies report strong population genetic differentiation between Japanese and Hawaiian colonies the two groups do share some haplotypes suggesting that genetic separation is relatively recent.

Ando *et al.* (2011) studied eleven polymorphic microsatellites in Black-footed Albatross from the Bonin Islands and found no genetic differentiation among the sub-populations of those islands. As yet there have been no studies of other mitochondrial regions, genomic markers (such as microsatellites) or formal studies of morphological differences between birds from the western and eastern Pacific. Anecdotal references suggest Japanese birds tend to be smaller than Hawaiian birds (see Walsh and Edwards, 2005).

3.1.3 Assessment of diagnosability (as per the TWG's guidelines)

- A. Same age/sex individuals of Japanese and Hawaiian Black-footed Albatross **cannot** be distinguished by one or more qualitative differences.
- B. Same age/sex individuals of Japanese and Hawaiian Black-footed Albatross **cannot** be distinguished by a complete discontinuity in one or more continuously varying characters.
- C. Same age/sex individuals of Japanese and Hawaiian Black-footed Albatross **cannot** be distinguished by a combination of two or three functionally independent characters.

3.1.4 Decision

Although genetic data suggest strong population genetic differentiation between the Japanese and Hawaiian Island colonies of Black-footed Albatross it is our view there is insufficient information to support any taxonomic revision of black-footed albatrosses even at the subspecific level. Indeed the genetic differentiation revealed by the studies summarised above could have been elevated by the severe and recent population bottlenecks in the Japanese colonies (from intense feather collecting) thus it would be premature to act on these data alone. Further genetic and morphological studies are required before a taxonomic amendment could be justified.

4 REFERENCES

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