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SPLITTING

image

Cape, Kelp or Khoisan?



THE LARGE, WHITE-HEADED GULL COMPLEX provides a tough challenge for evolutionary biologists and birders alike. Most of the confusion occurs in the northern hemisphere, where some 15 species are recognised – although the debate on species limits continues, as does that on how and why they have undergone such a rapid recent speciation.

The Kelp Gull *Larus dominicanus* is the only member of this complex that breeds in the southern hemisphere. Australia's Pacific Gull *L. pacificus* and South America's Belcher's and Olog's gulls *L. belcheri/atlanticus* belong to a separate group of gulls that are characterised by having black tail bands in adult plumage.

A review of the radiation of the large, white-headed gulls by Dorit Liebers and colleagues (2010, pp. 351–371 in *Evolution in Action*, edited by M. Glaubrecht, Springer-Verlag, Berlin) showed that the Kelp Gull evolved from a migratory population of Lesser Black-backed Gull *L. fuscus* that established a breeding population

in the southern hemisphere. However, the study didn't delve into the variation among Kelp Gull populations. Kelp Gulls occur in South America, southern Africa, Madagascar, Australia, New Zealand and most sub-Antarctic islands, as well as locally in the maritime Antarctic.

The southern African population was recognised as a distinct subspecies, *L. d. vetula*, by Richard Brooke and John Cooper (1979, *Durban Museum Novitates* 12: 27–37), differing from other populations mainly by retaining a dark eye in adult plumage. Subsequently, a detailed analysis of gull skeletal structure by Philip Chu (1998, *Cladistics* 14: 1–43) found such marked differences in skull

structure that *vetula* was placed in an entirely different group from *dominicanus*. This resulted in calls for *vetula* to be treated as a separate species, variously dubbed the Cape or Khoisan Gull. However, in the absence of genetic evidence, Roberts 7 took the conservative view to retain *vetula* as a subspecies of Kelp Gull.

Viviane Sternkopf's PhD thesis (2011, Ernst-Moritz-Arndt-Universität Greifswald) provides the first genetic data on the relationships within Kelp Gull populations, and the results are intriguing. She sequenced three mitochondrial genes from 20 *vetula* samples collected in Namibia, and compared them with birds from Argentina, Chile, New Zealand, Kerguelen and the Antarctic Peninsula. Unfortunately there was no material from the tiny Madagascar population. Most of the *vetula* samples grouped together at the base of the Kelp Gull radiation, suggesting that southern Africa may have been the initial site of colonisation from the north.

However, four Namibian birds grouped with the South American samples, suggesting some gene flow back across the South Atlantic. Roberts 7 assumed that the occasional records of vagrant Kelp Gulls reaching southern Africa were *judithae* from sub-Antarctic islands in the south-west Indian Ocean, but the genetic results suggest that South American *dominicanus* are more likely to reach our shores. Indeed, this makes sense in terms of the relative size and mobility of potential source populations. *L. d. judithae* is a scarce, resident population (for example, there are fewer than 500 Kelp Gulls at South Africa's Prince Edward Islands). By comparison, Kelp Gull numbers are increasing along the east coast of South America, and they have recently expanded their range northwards, even reaching North America (where they hybridise with other large gulls). Kelp Gulls, presumably from South America (given the preponderance of vagrants reaching the islands from the west), are regular vagrants to the Tristan archipelago, more than half way

from South America to southern Africa. It appears from the small sample of Namibian birds examined that *vetula* is still sufficiently linked to other Kelp Gull populations to not warrant recognition as a distinct species.

Sternkopf also found that birds from New Zealand (including the Chatham Islands) grouped with birds from the Antarctic Peninsula, which together were paired with birds from Kerguelen. As a result, birds currently lumped together into nominate *dominicanus* are not each other's closest relatives. Based on this, Frédéric Jiguet and colleagues reassessed morphological variation in the nominate form of Kelp Gull (2012, *Zoological Studies* 51: 881–892) and proposed that pending further investigation, six subspecies should be recognised: *dominicanus* from South America, *vetula* from South Africa, *melisandae* from Madagascar, *judithae* from the Indian Ocean sub-Antarctic Islands, *austrinus* from the Antarctic Peninsula and *antipodus* from New Zealand and the adjacent sub-Antarctic islands.

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top An immature Kelp Gull, photographed at sea en route to Tristan da Cunha from Cape Town, is probably from the South American nominate population.

above The Kerguelen endemic *L. d. judithae* on sub-Antarctic Marion Island, is characterised by having a smaller bill and more extensive white in the outer primary tips than other populations.

above, left An adult Kelp Gull in New Zealand, formerly considered *L. d. dominicanus*, but now split as *L. d. antipodus*.

opposite An adult southern African Kelp Gull *L. d. vetula*, showing a heavy bill and the dark iris typical of most (but by no means all) adult *vetula*.