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USING RINGING DATA TO UPDATE THE CONTINENTAL DISTRIBUTIONS OF THE SUBSPECIES OF THE LESSER BLACK-BACKED GULL

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Henrik was doing water quality work on Lake Tumba in the Democratic Republic of the Congo when he noted several nominate Lesser Black-backed Gulls *Larus fuscus fuscus* (LGGB) flying around his dugout canoe. Realizing that they might be out of known range, he phoned Henk and asked for clarification. Henk jogged (more accurately walked - his only physical exertion for this whole exercise) to the library next door, photographed the distribution maps from Birds of Africa with his (rather old) cell phone, and MMSed it on the same day to Henrik who was still sweating in his canoe (he might have been on shore already, but it sounds more dramatic this way).

The discrepancies between the observations and published ranges set in motion a series of investigations of existing literature and museum data. Michel, in Tervuren, contributed with his vast knowledge, connections, data, and observations from extensive travels in the region. We assessed and compiled available field observation data, museum skin localities and ring recovery data for the Congo Basin, and published the first article in *Ornis Fennica* in 2010 (Kylin et al. 2010). The data indicated that the Congo basin seems to be an important wintering area for these birds, albeit

dispersed widely but thinly throughout the massive network of the Congo River and its many tributaries. Henrik also picked up on possible conservation threats when interviewing local fishermen. The gulls are hunted and consumed, and we provisionally associated this harvesting with observed declines of nominate LBBGs in their breeding range in Europe during recent decades - a period coinciding with conflicts in central Africa.

The lack of data on the wintering grounds of LGGBs in central Africa (clearly related to difficulties in performing fieldwork in this inhospitable area) have, up till then, left this wintering area unrecognized. We suggested in the 2010 article that the main wintering area for the nominate LBBG covers an area from the Rift Valley lakes westward into the Congo basin. We also suggested that, in contrast to the mainstream literature, only a small proportion of the population winter on the East African coast, but this needed substantiation from ring recovery data of all the subspecies of the LBBG on a continental scale. Henrik returned home (not by canoe but by aeroplane) to Sweden.

We then compiled, mapped, and analyzed available data on 269 ring recoveries and 14 verified museum specimens in sub-Saharan Africa south of 25° N, and published it in the second article in *Bird Study* (Kylin et al. 2011). Because identifying subspecies in the field is difficult, we only used recovery data of chicks ringed in breeding colonies in Europe where the subspecies, up until then, were still separated, or from museum skins that could be verified. The resulting ranges of the three major subspecies are summarized in Fig. 1. This is only an informal map created for Afring News based on Kylin et al. (2011), and is only meant for illustrating this article. Further work, not least fieldwork in the Congo basin, is needed to fully understand the African ranges of the LBBG subspecies.

The wintering area of the nominate *L. f. fuscus* that we plotted does not concur with the ranges shown in most reference texts. More rings have been recovered in the Congo basin and along the Atlantic coast than on the eastern seaboard of Africa. We also found that, based on ring recoveries (including a set of colour ring data), *L. f. intermedius* and *L. f. graellsii* winter mainly in westernmost Africa



(there are some ring recoveries south and east of Senegal). Of the latter two subspecies, we had no verifiable finds south of the equator. Please note that the map shows both subspecies occurring in the Sahel, but all finds were close to major waters. Not noticeable from

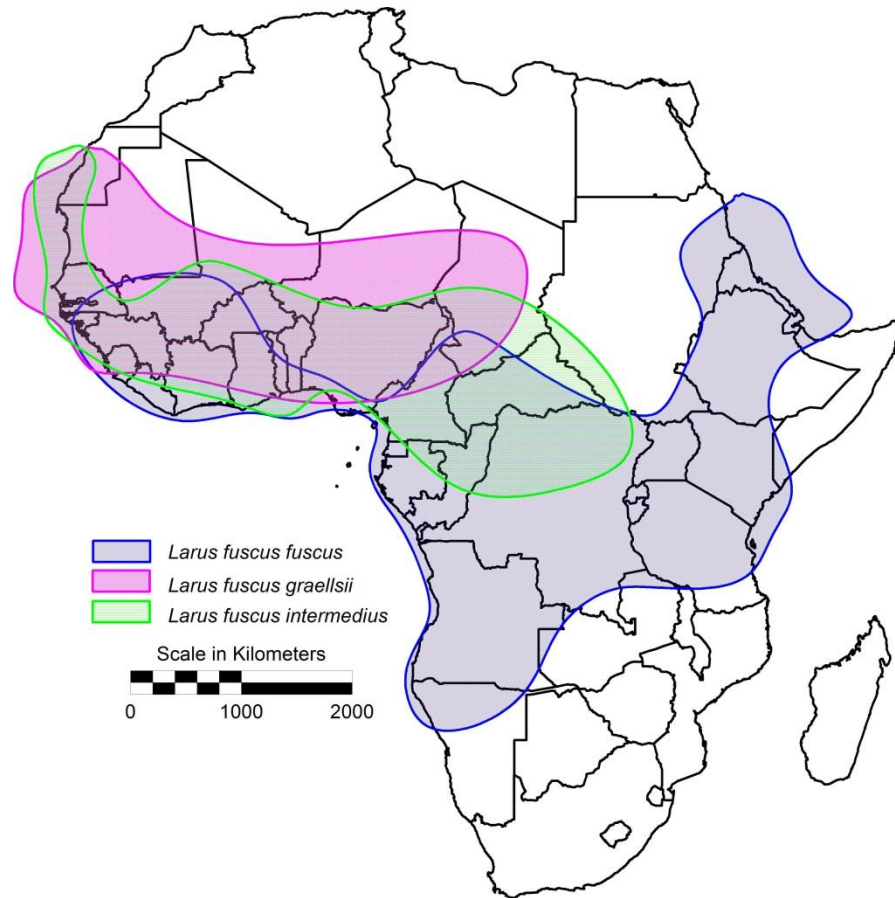


Fig. 1. Provisional distribution of the three major subspecies of *Larus fuscus* in Africa, south of 25 °N. (This is only an informal map created for Afring News based on Kylin et al. (2011), and is only meant for illustrating this article.)

this map, but illustrated in Kylin et al. (2011), is that *L. f. fuscus* had a high density of recoveries in an area stretching in an arc from Ethiopia, Lake Victoria, through the Congo basin to the Gulf of Guinea. There were some recoveries south into Angola and Namibia. The previously suggested, and up till now accepted, wintering area along the east coast of Africa for *L. f. fuscus* seems less important than the Congo basin and the western seaboard of Africa. It should be noted that on the east coast a fourth taxon, *L. [fuscus] heuglini*, sometimes regarded as an LBBG subspecies, sometimes as a separate species, complicates the picture. Unfortunately, we did not obtain access to any ringing data for *heuglini*.

The distribution of *graellsii* and *intermedius* is concentrated in western Africa, with some inland towards the south and east. The southernmost ring recovery of both was on the equator in the Republic of the Congo (Brazzaville). Although there were some museum specimens and published observations suggesting *graellsii* south of the equator, these could not be substantiated. The museum specimens were all in juvenile plumage in which the subspecies are essentially impossible to distinguish, and the biometrics of the specimens indicated that even the species determination was wrong (possibly Kelp Gull). The field observations were based on literature in which the wintering range of *fuscus* was given as the Norwegian Sea while the only subspecies indicated in Africa was *graellsii*; i.e. deficient information that easily could lead to faulty field determinations. Thus, we have not found any verifiable evidence of any subspecies other than for *fuscus* south of the equator.

Henrik also noticed that *fuscus* preyed on small fish between the trees of the flooded forest of the Congo basin (Kylin et al. 2010), possibly a consequence of the higher fish productivity in the flooded forest than in open water bodies. It is possible that this feeding adaptation has enabled *fuscus* to utilize the flooded forest in ways that the other subspecies will not, mainly restricting them to coastal areas and large water bodies. If this is so, the large tracts of flooded forest in central Africa could act as a geographic barrier to *intermedius* and *graellsii* dispersing further south. If climate change would have an impact on distribution, we think it might have a greater



effect on *graellsii* and *intermedius* as they have less available landmass to the south than *fuscus*, although they might shift further southwest along the coast.

This work, based mainly on ring recoveries, shows that much still can be gleaned from one of the most basic forms of avian distribution determination. It is noteworthy, though, that the picture only became clear when analysing ring recovery data from all the countries that had submitted data on LBBGs to the EURING database. Previous evaluations by national ringing programmes based on their own data only did not lead to any questioning of the view presented in the literature. Satellite tracking, stable isotope work, and light loggers are playing an increasingly important role nowadays, but do not provide historic data. Undoubtedly, many more surprises await careful analyses of combined datasets. However, it is also very important to talk to the people that have lived in the area their whole lives where key field observations are made. They know and see a lot that could contribute towards understanding a species.

Sitting in canoes and phone-a-friend, even one with an old cell phone, can initiate things that are not always foreseen – like updating continental distributions of a gull species. Observations (which is different from just looking), combined with a sharp mark-one eyeball, many good people (see acknowledgements), good biological knowledge, an inquisitive mind (or four), and spending time that we never had, was crucial in this study. However, there remains so much more to explore!

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Lesser Black-backed Gull over Lake Tumba. Photo H. Kylin.