map R3

African vulture hotspot mapping

range map: Rueppell's Vulture

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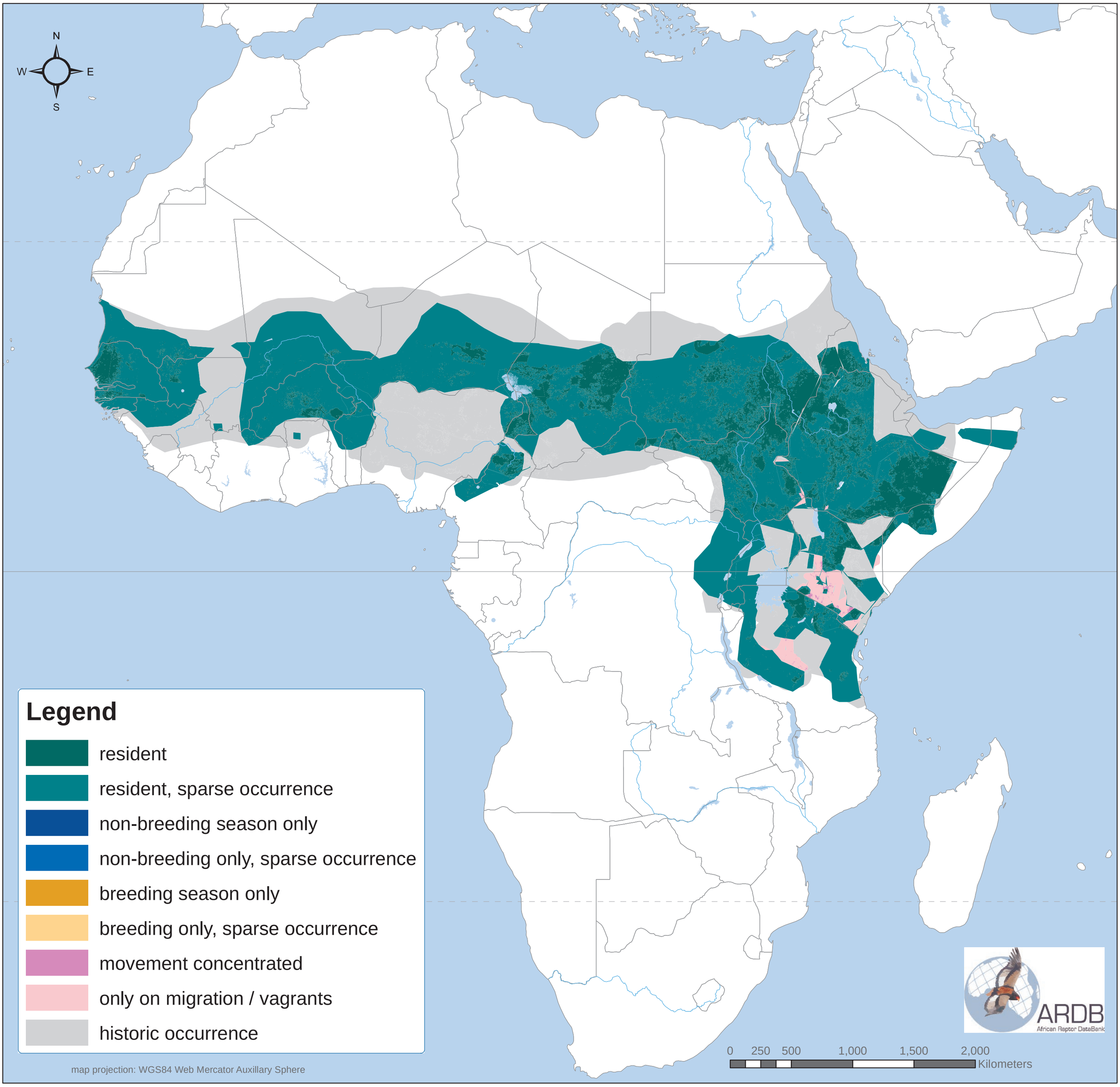

METHODS:
As part of the African Raptor Databank project, range maps were captured from Kemp and Kemp (1998) and compared with Birdlife range maps (Birdlife International and NatureServe 2015). Historic ranges were inferred by digitizing all 16k data points from the Snow Atlas (Snow, D.W. 1978) which represent collections in the British Museum of Natural History up to the end of 1977. Historic points were buffered by 100km to estimate formerly inhabited areas. Some additional historic records were sourced elsewhere particularly for Namibia (Chris Brown in litt. 2017). Current ranges were derived from the afore-mentioned range maps plus 100km buffers around recent (1978 onwards) sighting data points from the African Raptor Databank. In 2015 the ARDB rangemaps for vultures were updated by expert consultation using online webmaps, organized by Darcy Ogada and The Peregrine Fund and supplied to Birdlife to inform uplisting for certain species on the IUCN RedList. In 2016-2017 a concerted effort was made to collate new vulture sightings from surveys and new tracklog data from movement studies of tagged vultures into the ARDB. Tracklogs were sourced on > 200 tagged individuals of eight species. ARDB rangemaps were finally reviewed and edited to incorporate these new data. Range types were classified into: resident (green), present only in the breeding season (orange), present only in the non-breeding season (blue), vagrant or movement only (lilac) and historic occurrence (grey). Distribution modelling using Maxent software (Phillips et al. 2017) was performed on historic and recent observations of vultures from the ARDB. Occupied habitat for each species was defined by extracting likelihood values > 0.25 which approximated the 10 percentile training presence in most of the models. These extracts were used to colour code the range maps further whereby dark colours indicate likely occupancy within the range and pale colours indicate sparse occurrence.

CREDITS: Coordination: Ralph Buij (Wageningen University & Research), Corinne Kendall (North Carolina Zoo), Ara Monadjem (University of Swaziland). Data collation: Lutfor Rahman & Lou Luddington (Habitat Info). Analysis & map production: Rob Davies (Habitat Info). Finance: The vulture surveys, data gathering and habitat and threat modeling were funded by the following organisations through Wageningen University & Research (which also contributed resources): Dutch Ministry of Economic Affairs, WWF-Netherlands, UNEP-CMS Raptors MoU, North Carolina Zoo, Fondation LePal Nature, Quagga Foundation, Stichting Vogelpark Avifauna, Stichting Koninklijke Rotterdamse Diergaarde, Detroit Zoological Society, and Stichting Wildlife. Through The Peregrine Fund this project benefited greatly from access to the ESRI Grant Scheme. Data on vultures were contributed or facilitated by the following individuals: Yilma D Abebe, Hichem Azafzaf, Laila Bahaa El Din, Neil & Liz Baker, Clive R Barlow, Keith Bildstein, Claire Bracebridge, Andy Branfield, Erik & Asaph Brohaugh, Joost Brouwer, Chris Brown, Evan Buechley, Ralph Buij & Barbara Croes, Andre Botha, Mike Cadman, Alazar Daka Rufo, Rob Davies, Maria Diekmann, Nina Farwig, Oliver Fox, Toby Galligan, Beckie Garbett, Ashwell Glasson, Roi Harel, Stratton Hatfield, Ohad Hatzofe, Joseph Heymans, Constant Hoogstad, Mawdo J Jallow, Walter Jubber, Gregory Kaltenecker, Adam Kane, Chris Kelly, Alan & Meg Kemp, Corinne Kendall, Holger & Claire Kolberg, Bernard & Antje Madden, Glyn Maude, John Mendelsohn, Mike McGrady, Ara Monadjem, Campbell Murn, Ran Nathan, Karin Nelson, Stoyan Nikolov, Darcy Ogada, Steffen Oppel, Louis Phipps, Bram Piot, Thomas Rabeil, Sascha Rösner, Lizanne Roxburgh, Volker Salewski, Andrea Santangeli, Dana Schabo, Orr Spiegel, Lindy Thompson, Simon Thomsett, Dirk van Stuyvenberg, Rien van Wijk, Munir Virani, Tim Wacher, Kerri Wolter (VULPRO) and numerous other African Raptor Databank observers; and by the following organisations: AFRICAN RAPTOR DATABANK, AFRICAN IMPACT, BIRDLIFE INTERNATIONAL & NATURESERVE, BIRDLIFE BULGARIA (BSPB), BIRDLIFE TUNISIA (AAO), BOISE STATE UNIVERSITY, CITES (MIKE DATABASE), ENDANGERED WILDLIFE TRUST, HAWK CONSERVANCY TRUST, HAWK MOUNTAIN SANCTUARY, INTERNATIONAL UNION FOR CONSERVATION OF NATURE (AFRICAN ELEPHANT DATABASE & REDLIST MAPS), ISRAEL NATURE & PARKS AUTHORITY, NATURAL HISTORY MUSEUM (TRING), MOVEBANK, NIOKOLO-KOBA CITIZEN SCIENCE PROJECT, NORTH CAROLINA ZOO, RAPTORS BOTSWANA, RARE AND ENDANGERED SPECIES TRUST, ROYAL SOCIETY FOR THE PROTECTION OF BIRDS, TANZANIAN BIRD ATLAS, THE PEREGRINE FUND, UNIVERSITY OF UTAH, VULPRO, WEST AFRICAN BIRD DATABASE, WILDLIFE ACT and WILDLIFE CONSERVATION SOCIETY.