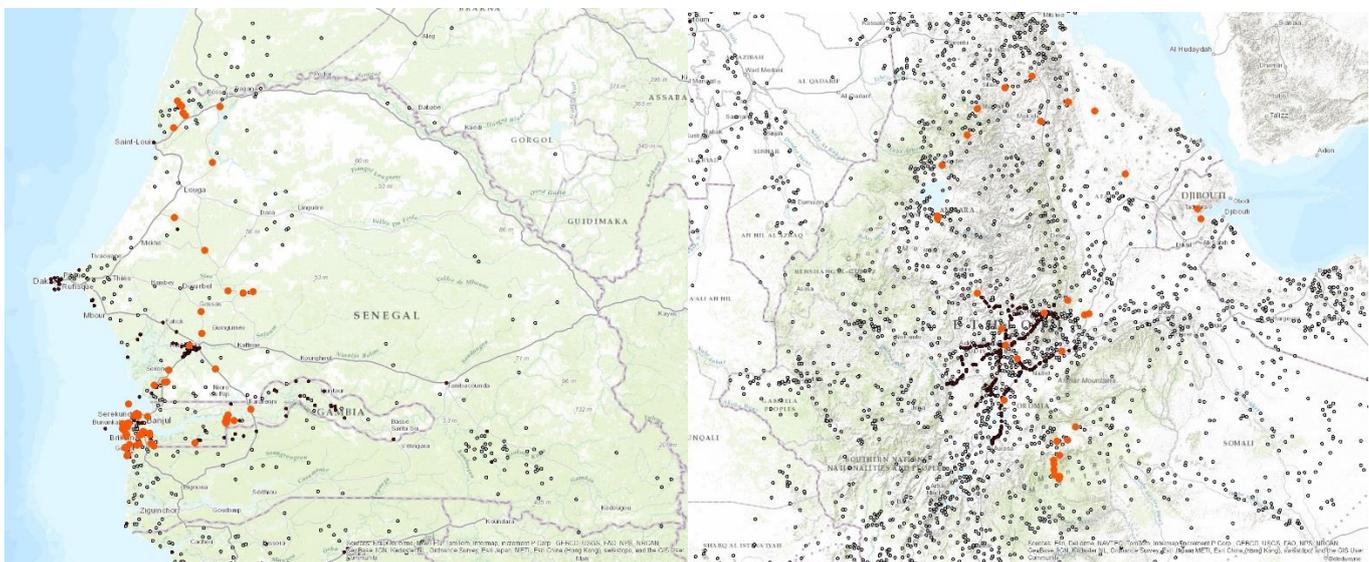


ARDB update for April 2015



- Database grows to 106,046 records at the end of April
- 1529 records added during April
- First recent records for Djibouti and extended coverage of Ethiopia and Senegambia thanks to spreadsheets supplied by Evan Buechley and Oliver Fox
- Continued contributions for Kenya and southern Africa by users of the Android app (1166 records in April)
- Commencement of distribution modelling
- Funding received for iPhone and iPad version of the app – target delivery August (and invitation for feedback)

We added our first data for Ethiopia last month thanks to Yilma Abebe, and it has been great to see more data come in during April from lowland areas of Ethiopia and our first recent records for another country, Djibouti, thanks to Evan Buechley and The Peregrine Fund (131 records). We have also had new data in from Oliver Fox (232 records) which boosts our coverage of Senegambia. These two graphics show the data holdings for these two areas with historic records in grey, recent records in dark red and new records for April in bright orange:



We are also busy loading the data received from Stephanie Dolrenry of the Lion Guardians. Thanks so much for these important spreadsheet contributions. Please keep them coming!

As we approach first year of use, Android app accounts for 11,303 new records and survey effort of 1713 hours / 52,885 kms travelled (n=2239 surveys logged)

We launched our Android App about this time last year in Namibia, so it has been fantastic to see the uptake and to receive so many new records this way to our database. The summary of the survey effort given above shows just how much potential for field observation by citizen scientists there is out there, and we are so grateful to have been able to tap in to some of this amazing resource. Again, over a thousand records submitted via the app during April and these are summarised by observer in the table overleaf. I was lucky enough to chip in some from Kruger and Swaziland on a recent trip, and make sure the app is working as we want it to. We have had very few reports of the App crashing via Google in this first year of use. While in Swaziland I met with Prof Ara Monadjem who has very kindly offered to help us fill in raptor data for his country.

Extremely good news during April was the receipt of ongoing funding to the order of \$5000 from UNEP-CMS 'Raptors MoU' via The Peregrine Fund, for development of an iOS version of the App to run on iPhones and iPads. This amount has been matched by a further \$5000 from Ekerstrom Consulting in the States and a further \$5000 has been allocated later to this project by UNEP-CMS 'Raptors MoU' to ensure completion. This means we have all the funds we need for this important technical development and our software developer, Andrew Rayner, is now able to proceed with it. Thank you so much to Nick Williams, Kurt Ekerstrom and The Peregrine Fund for arranging this finance. We expect

to be able to make the iOS App available this August. We will also provide an update to the Android App at the same time so now would be a very good time to send us any feedback on the app and any additional features you would like to see on it, although some feedback already suggests it may be a bit 'data heavy' so perhaps we need to simplify things further – let us know what you think and perhaps we can provide flexible versions.

Mobile app records (uploaded April 2015)

Name	RECORDS
OBSERVERS	RECORDS
Andre Botha	323
Claire Kolberg, Holger Kolberg	201
Rob Davies	77
Ben Hoffman	74
Stefan van Stuyvenberg	73
Shannon Hoffman	64
Dirk van Stuyvenberg	48
Andy Branfield	45
Bernard Madden	36
Gisela Madden	33
Shannon Hoffman, Tim Van Der Meer	29
Steven Evans	26
Darcy Ogada	25
Jaco Smith	25
Shannon Hoffman, Ben Hoffman	24
Joseph Heymans	19
Shannon Hoffman, Jan De Waal	14
bruce wardsmith	12
Shannon Hoffman, Ben Hoffman, Sonja Kruger	6
Loutjie SteenbergSteenberg	3
Shannon Hoffman, Josh Kleyn	3
Ben Hoffman, Shannon hoffman	2
Shannon Hoffman, Jan De Waal, Kayla Asherwood, shayna asherwood	2
Damian Newmarch	1
Shannon Hoffman, Mike Neetling	1

1166

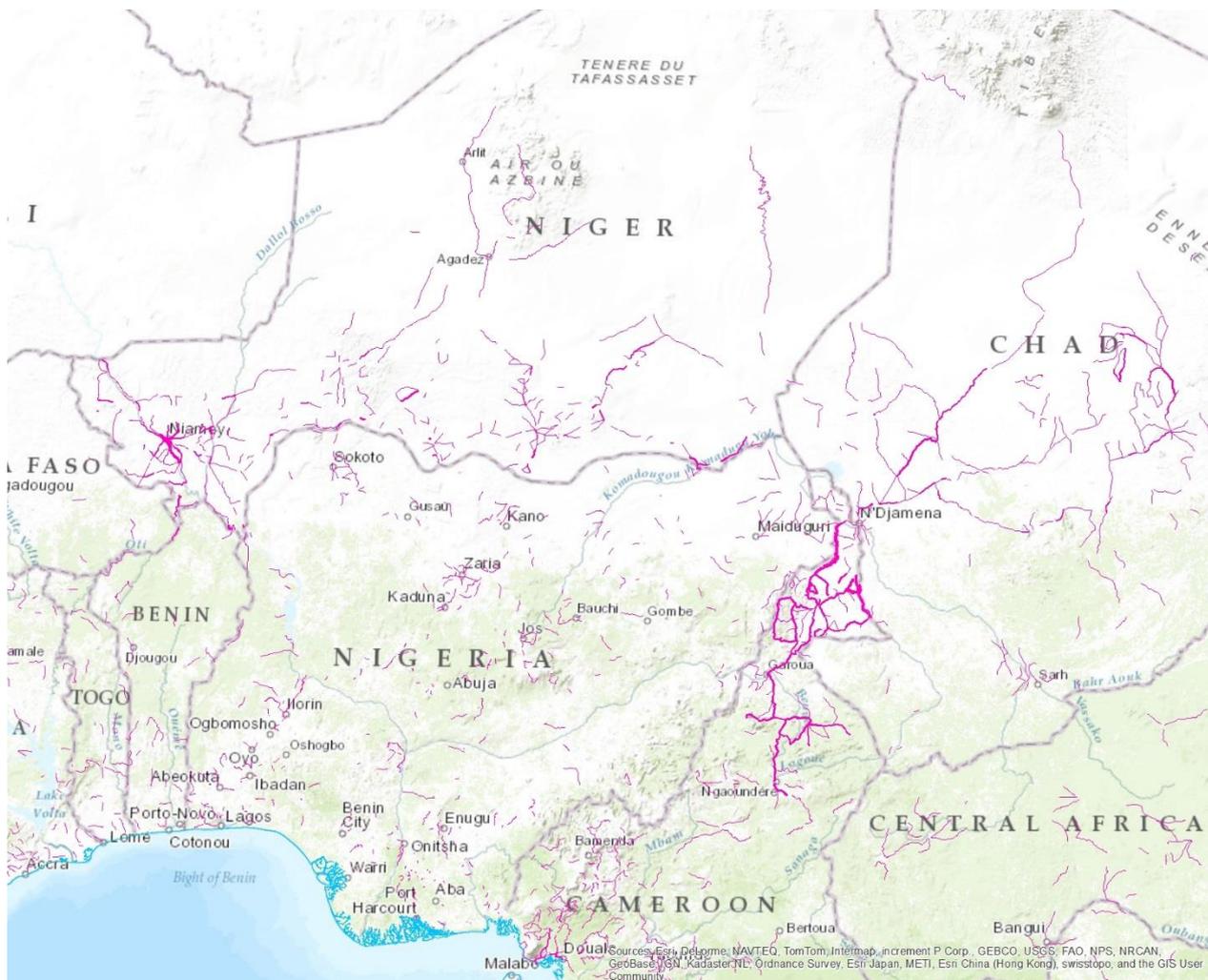
Other news is that we have started with some of the habitat mapping / distribution modelling for select species and the preliminary results are looking promising. We are using Maxent software for this which has a good track record in this field and is widely accepted and offers a large literature. It also integrates really well with the Arc-GIS software we are using for this project. The species of interest for the moment are Cassin's Eagle which we had the data whip-round for not long ago, Martial Eagle and Secretarybird i.e. some of the species of much concern at the moment. We also hope to provide habitat mapping for Southern Ground-Hornbills which have been made honorary raptors in the app and database – so if you see some of these amazing birds, please log them, you will significantly help improve the models. Thanks Andre for already sending us some SGH sightings in Kruger!

We hope to find a way of publishing these early results which indicate the likely historic distributions of every species of African raptor, along with other distribution materials, in the form of a free online atlas as soon as we are able to. The next step will be to carry out a thorough conservation assessment for each species based on likely current and future distributions which can cater for expected future influences of climate change and land cover change. This will entail a minimum three days' work per species. We are still looking for funding for this phase of the project so if anyone is in a position to sponsor a detailed assessment for a species of interest please get in touch.

In the early modelling it has become very apparent that the historic data has a wonderful spread across sub-Saharan Africa and gives good results for impressions of historic 'climate-space' occupied by each species. But that our recent data are still very patchy relating to intense observer effort in certain parts of Africa. We have been in correspondence with authors of the Maxent software to find the best ways of overcoming observer bias and are making some headway with this, but the simplest way of overcoming the problem is to get out there birding in as many parts of Africa as possible.

We have prepared some mapping to help observers identify gaps in the databank. The App survey logs provide a very accurate and detailed indication of observer effort but this is limited to users who make use of this important function. Please, if you use the Apps, try to log surveys. A lot of the observations in the databank were made without records of observer effort but we can get an indication of the latter by tying observations to stretches of road (within 5kms). The following graphic shows record densities along stretches of road in West/Central Africa with thick lines indicating well-travelled roads. We have provided three layers of observer effort (App survey routes, road record densities, and combined effort which also assimilates observations made away from roads) into an interactive web map which may be viewed at the following address to see how coverage looks in your area:

http://gis.habitatinfo.com/flexviewers/ARDB_effort/

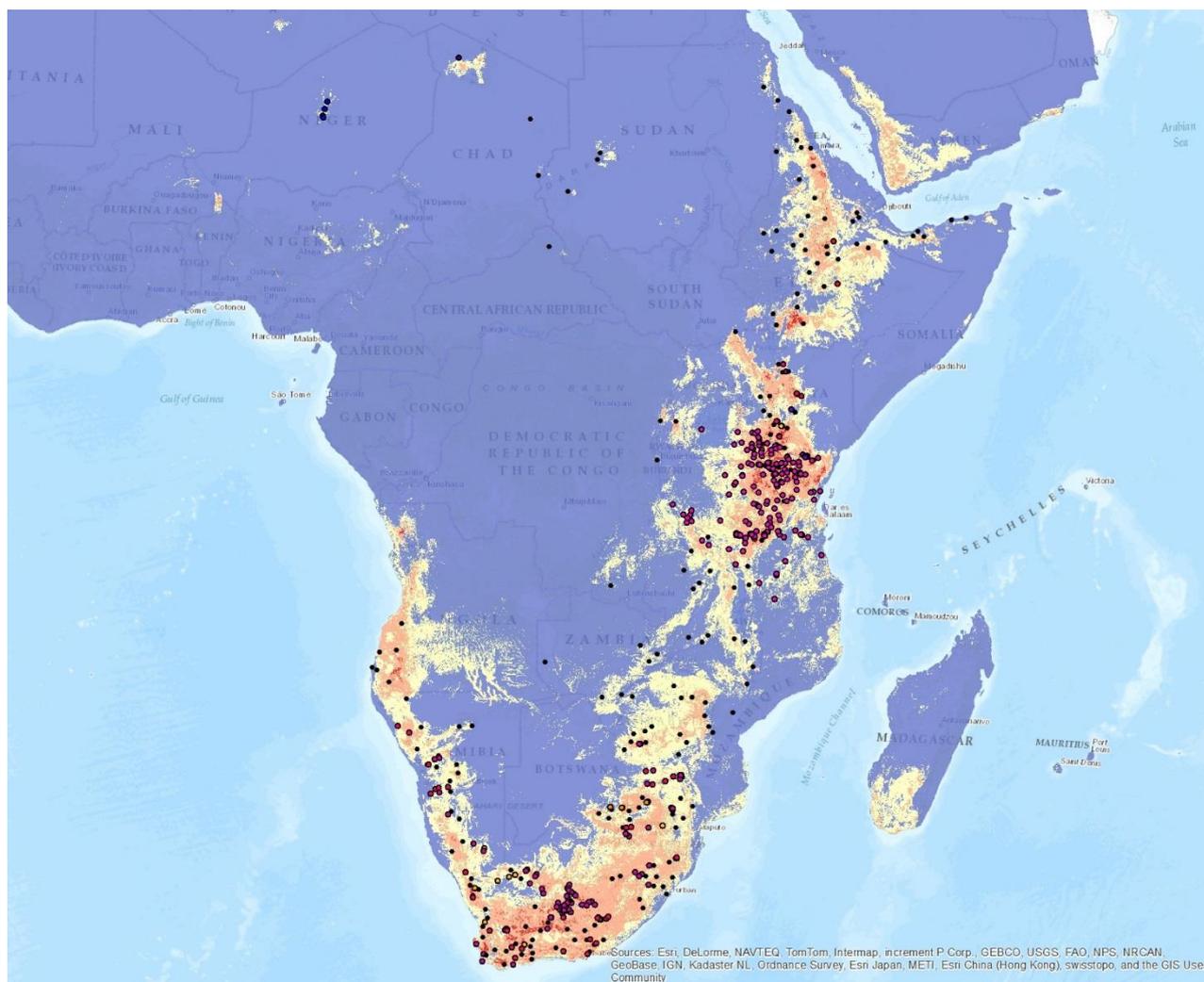


Record density estimates relate mainly to the number of times that we drive particular routes but they also reflect other biases, for instance we are much more likely to notice and record raptors when we are driving slowly through a park looking for wildlife than when we are on a highway trying to get there. Over time, we hope to get a better understanding of these biases and adapt our analyses accordingly.

Don't stop logging raptors on your regular routes even if these show as well-studied because the monitoring over time is vital to understanding population trends, but your data will be most valuable to inform the habitat models if you can log any raptors that you see on any of the less sampled routes.

This last graphic shows early results of the modelling for Verreaux's Eagle. Yellow areas indicate potential habitat (>25% likelihood of occurrence), orange areas indicate prime habitat (>50% likelihood of occurrence) and red areas indicate optimal habitat (>75% likelihood of occurrence). The model matches the observation points quite well and this can be shown statistically by reserving a portion of observations to test the model with. Some of the black historic records are situated close to apparently suitable habitat. This could be due to sampling errors because we estimate that the triangular symbols in the Snow Atlas span up to 70km across when scaled up! So this stresses the importance of obtaining geographically accurate records for the Databank and the modelling exercises, something that the App handles automatically. Please use it if you can...

Best wishes, Rob Davies & ARDB



Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS-User Community

