



African Raptor Databank

Annual review for 2015



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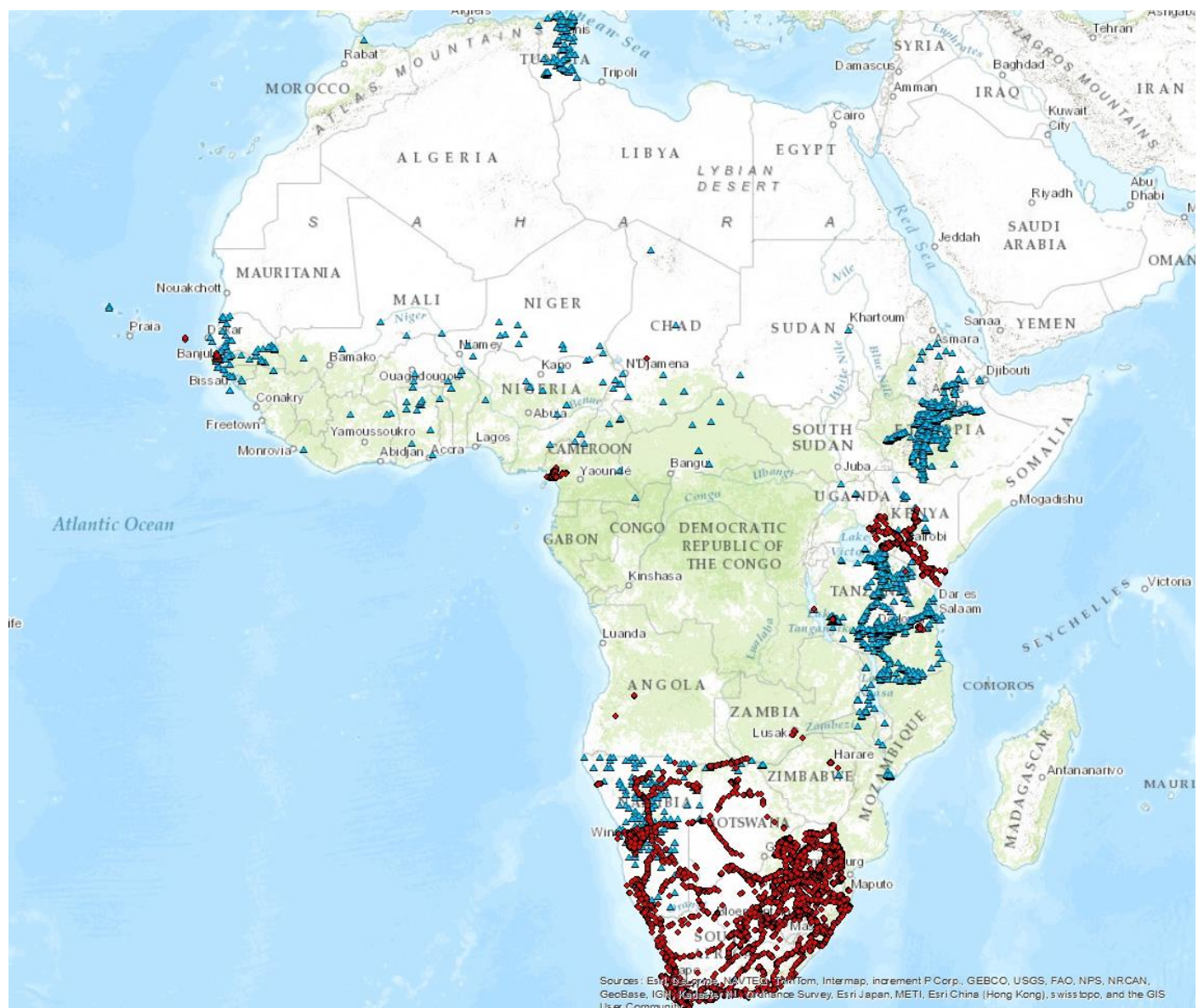


It has been another amazing year for the ARDB, one of steady growth and early implementation for our collective database. We have recorded > 20% growth in the database over the year with 26k records added bringing the total to 123396 records. Two thirds of this growth has been due to monthly Android App contributions which have grown from approx 1000 records per month to now 2000 records per month. We have also introduced our own portal for the streamlining of spreadsheet data through a web interface..



2015 was our third full year of data gathering for the African Raptor Databank project. The plan is to collect data for another two years in order to be able to make sound conservation assessments of each African raptor species in relation to the remaining extent of their habitats. We owe sincere thanks to Munir Virani and his team at The Peregrine Fund for honouring their commitment to the project by continuing to provide the crucial server software licence for this period, as well as some important seed funding for technological development of the habitat modelling exercise.

Our trusty regional coordinators have all played key roles again this year: Munir and Darcy Ogada with Simon Thomsett have coordinated much new data for Tanzania, Kenya and Uganda (Neil and Liz Baker providing a considerable shot in the arm with their update from TBA); Hichem Azafzaf contributed his own records for Tunisia and has helped coordinate new contacts in Morocco, Algeria and Libya; Andre Botha continues to astound us and has contributed one fifth of **all** records for this year on his travels as well as recruiting many new observers to the project; we have had significant contributions from Namibia – see later; and in West Africa Clive Barlow continues to expand the network of the ARDB with significant new data from Senegal, even Cape Verde Islands, while Joost Brouwer and Ralph Buij have collated Secretarybird and other records for the entire region. Below is a map showing all contributions for 2015 with App records shown in red (n=17,470) and spreadsheet data (n=8,701) in blue triangles:



The 2015 data contributions shown in the preceding map are summarised by created user in the Appendix. To present total recent record (1978 onwards) coverage to date (feb 2016) the following table gives African countries sorted by ARDB record density per 1000km2.

COUNTRY	km2	Records	Records/1000km2
Gambia	11376	2471	217.2120
South Africa	1606290	48746	30.3469
Tanzania	961479	24533	25.5159
Cameroon	474653	10121	21.3229
Kenya	586568	5889	10.0398
Senegal	210443	1309	6.2202
Tunisia	226764	1230	5.4241
Niger	1310653	4851	3.7012
Malawi	125410	365	2.9105
Swaziland	21700	63	2.9032
Botswana	678572	1832	2.6998
Namibia	968619	2514	2.5954
Guinea-Bissau	35561	74	2.0809
Chad	1380460	2193	1.5886
Ethiopia	1167157	1796	1.5388
Benin	119606	173	1.4464
Lesotho	40408	35	0.8662
Rwanda	25462	17	0.6677
Mozambique	872030	574	0.6582
Sierra Leone	74735	45	0.6021
Uganda	243315	130	0.5343
Cape Verde	4451	2	0.4493
Zimbabwe	439669	193	0.4390
Zambia	800449	297	0.3710
Central African Republic	633019	210	0.3317
Madagascar	670442	199	0.2968
Nigeria	941439	147	0.1561
Mali	1385453	202	0.1458
Burkina Faso	289728	38	0.1312
Djibouti	22763	1	0.0439
Burundi	27238	1	0.0367
Gabon	266594	8	0.0300
Ghana	244777	6	0.0245
Togo	58686	1	0.0170
Angola	1319276	18	0.0136
Cote d'Ivoire	329748	3	0.0091
Morocco	575686	1	0.0017
Sudan	2046729	3	0.0015
Egypt	1238234	1	0.0008
Libya	2052464	1	0.0005
Algeria	3001998	0	0.0000
Comoros	1758	0	0.0000
Democratic Republic of the Congo	2363440	0	0.0000
Equatorial Guinea	27228	0	0.0000
Eritrea	129734	0	0.0000

Guinea	254668	0	0.0000
Liberia	97807	0	0.0000
Maldives	304	0	0.0000
Malta	497	0	0.0000
Mauritania	1192758	0	0.0000
Mauritius	2312	0	0.0000
Mayotte	414	0	0.0000
Republic of Congo	344598	0	0.0000
Reunion	2902	0	0.0000
Sao Tome and Principe	1009	0	0.0000
Seychelles	505	0	0.0000
Somalia	646522	0	0.0000
South Sudan	646928	0	0.0000
Tonga	868	0	0.0000
Western Sahara	325626	0	0.0000

Two things have emerged since our initial plan was made: 1. the potential usefulness of the ARDB as a long-term monitoring mechanism, so we hope the project will continue beyond the five year data gathering period; and 2. the full realisation of the drastic decline in African vulture populations over the last few decades - we are really glad that our database is already sufficient to help us in our assessment of this acute problem and provide some guides for conservation actions. We hope to achieve a lot more along these lines during 2016 by identifying the most important areas to protect for these vulnerable birds and perhaps more coordinated monitoring of populations.

We have accessed data for a number of new countries during 2015. But major gaps still exist for North Africa and central Africa evident on the map above.

The year got off to a good start with a trip to Tunisia to meet our coordinator for North Africa, Hichem Azafzaf who kindly supplied 1343 raptor observations to the ARDB and has worked with us through the year to access new contacts for North Africa.

We lost Tim Wroblewski as a permanent staff member at Habitat Info at the end of February. This was a major setback as Tim has played a key role at Habitat Info over three years and especially in helping to establish the ARDB and we have really missed having him on call to liaise with observers, process datasets and compile reports when we were not busy with other projects. Happily though, Tim remains deeply interested in the ARDB and is able to help us on occasions. Tim also got Tony Farrar going on the photo library early in 2015 and Tony generously gave his time to get this aspect of the ARDB started. We still have the photo upload facility at the following web address for anyone who is able to share photos of African raptors with us but we need someone to take this forward again. <http://www.habitatinfo.com/ardb-image-submission/>

IT gremlins visited around the middle of the year and consumed us for much of June July when a software upgrade broke the link between the App and our server, amongst other vital things! Fortunately the App kept working in the field and our developer Andrew Rayner was able to rescue the situation with a new version and no data were lost. Our network guru here at Habitat Info, Simon Tryce, also played a major role in getting things back into shape for us.



From then on things improved and have got very busy for the ARDB. We are extremely grateful to Kurt Eckerstrom (Eckerstrom Consulting, \$5k received) and Nick Williams (UNEP/CMS Raptors MoU \$5k received) for their ongoing financial support to cover Andrew Rayner's time requirement of 30 days developing the iOS version of our app which will be launched before the middle of 2016.

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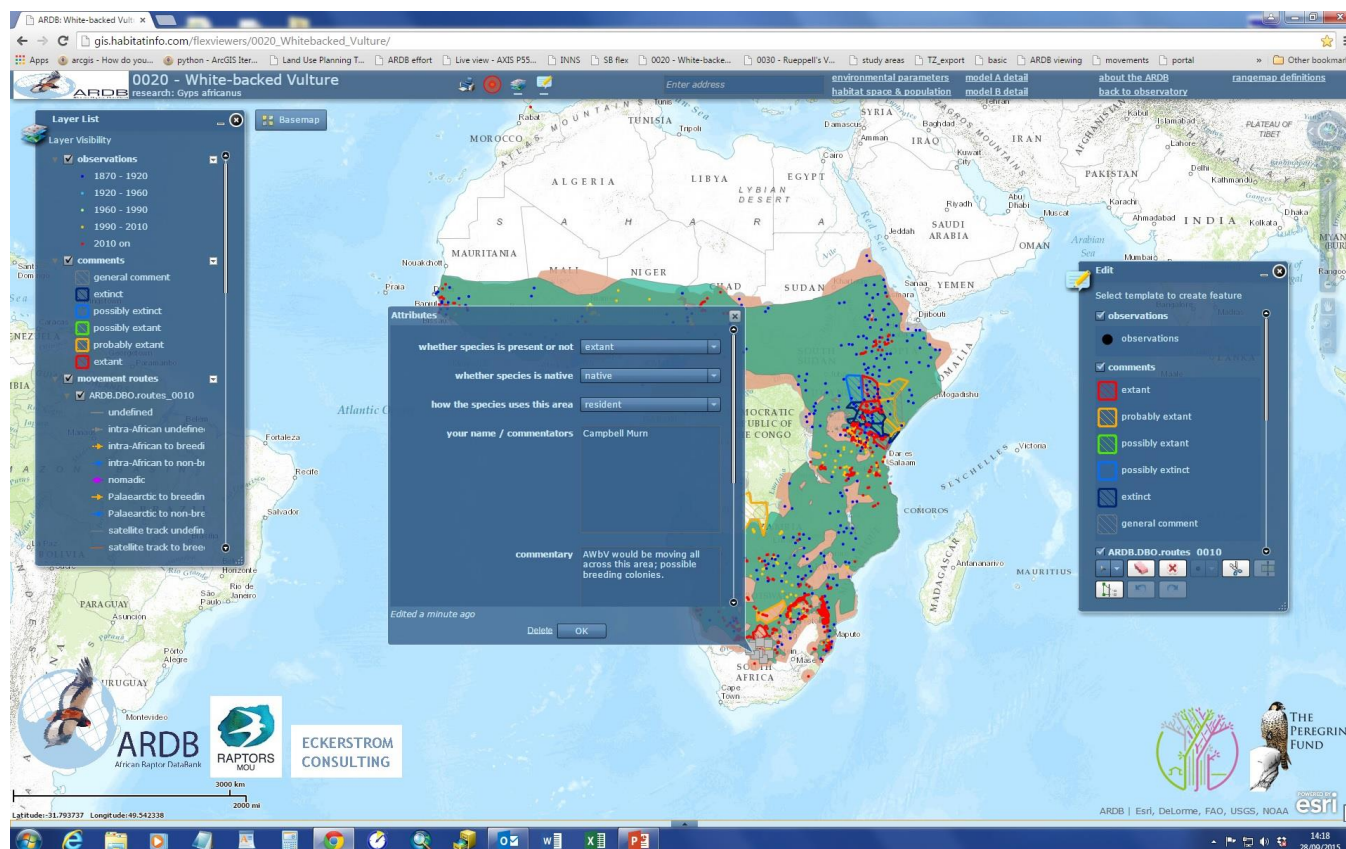
The Peregrine Fund very kindly provided seed funding of \$1500 to initiate first draft habitat models of all species that we hold data for. These were completed in June along with accurate measurement of the suitable areas for each

species. This first assessment uses all data records for each species (including historical) and does not yet cater for anthropogenic effects and habitat loss. We divided the suitable habitat areas of each species by a likely density based on body mass (territory size) to convert suitable area into theoretical maximum numbers. So the first draft habitat models provide a best case scenario for each species reflecting historic population distributions. From models, range maps and records we have compiled our first draft 'atlas' for African raptors and are currently experimenting with best methods to make these data available to you online. Our coordinators are considering what data are safe to release into public domain and we may opt for static pdf pages for the moment. We upgraded our server at Habitat Info to the maximum amount of RAM and we have also had fibre broadband connected so the performance of ARDB map services is now running at maximum for our current hardware configuration.

The Peregrine Fund also provided seed funding of \$1500 to initiate more detailed models for the current distributions of four priority species. An intensive review analysis for all data on Secretarybirds was already underway, coordinated by Ralph Buij. The ARDB provided a webpage for these Secretarybird researchers to view and appraise all available data including the modelling exercise which is underway. Other candidate species already under study for prioritised modelling of current populations include Martial Eagle, Cassin's Eagle and possibly Abyssinian Owl.

The ARDB database and the web technologies became fully implemented in September when we were invited to update the range maps for all African vultures ahead of the reassessment of IUCN Red List status. The reassessment was provided by Birdlife International but the updating of the range maps was organised very capably in a terribly short amount of time by Darcy Ogada of The Peregrine Fund. This became an efficient exercise for crowd-sourcing expert knowledge in a very limited space of time. Approximately 30 experts were invited to use a simplified web interface to the ARDB to demarcate polygons where they knew vultures had disappeared from or were still extant. We thought that the connection speeds would be too challenging for some but experts successfully used the web

interface to apply edits from Morocco, Ethiopia, Kenya and other countries in southern Africa. Birdlife International and The Peregrine Fund kindly covered two days of the development time and Habitat Info covered the remaining development, editing and analysis time which spanned a month. Experts were again provided with all the best-available information through a flexviewer interface for each species such as below:

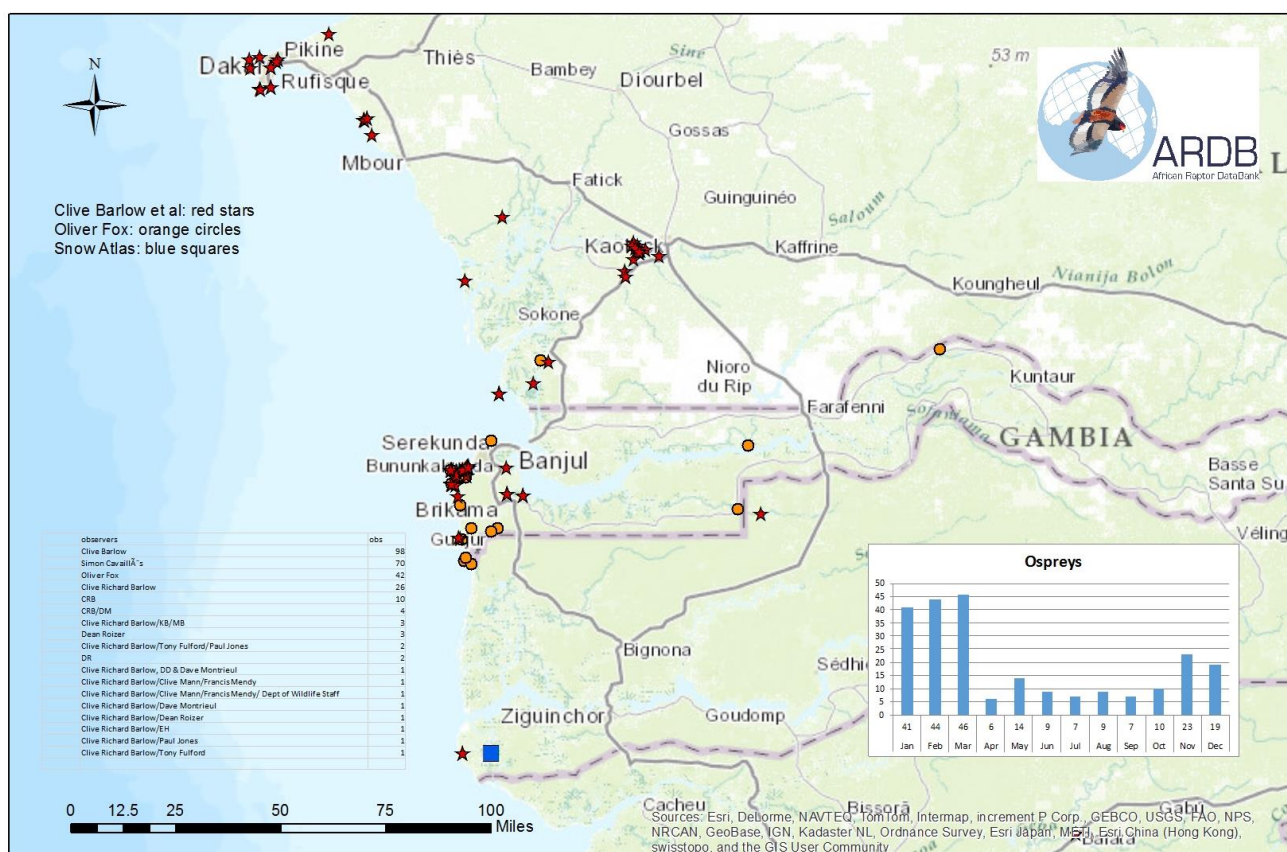


This project was challenging because it brought together different formats of range maps from the ARDB and Birdlife but this has led to a more thorough handling of this data type in our database. The updating of the respective vulture rangemaps played an important role in the uplisting of six species of vultures by IUCN to endangered (Cape Vulture

and Lappet-faced Vulture) and critically endangered (Hooded Vulture, African White-backed Vulture, White-headed Vulture, Rueppell's Vulture). We very much hope that contributors to the ARDB are glad to see their data working already for the conservation of African raptors. This novel project did not entail exporting ARDB data but the experts were able to use graphics of our data on the web maps to fine-tune the range maps.

We have had a few data requests to the ARDB in 2015. We have analysed numbers of Osprey records and seasonality in Senegambia for Clive Barlow and colleagues see graphic. In December we formulated our first formal data release agreement (form & terms may be viewed: http://www.habitatinfo.com/ardb/ARDB_data_release_form_v1_3.doc) with Rowen van Eeden to assist his important PhD work on Martial Eagles in Kruger Park, and Rowen has kindly reciprocated with his Martial data for the ARDB.

Osprey data holdings for West Africa ARDB 14 May 2015



In October Rob Davies attended the UNEP/CMS Raptors MoU third meeting in Trondheim, Norway, to present progress of the ARDB and particularly the Android App, at the invitation of Nick Williams. It was a fascinating meeting and a valuable outcome was the energetic commitment to rapid action on behalf African vultures by both Birdlife and a group led by Ralph Buij with the support of the Dutch Government.

So we have some new data types being captured by the ARDB including range maps and recently we are looking to mobilise movement data e.g. satellite tracks from research studies which can reveal much more about migratory behaviour than ad hoc sightings. Following on from the meeting in Trondheim, Ohad Hatsofe from Israel Nature and Parks Authority has generously shared Egyptian Vulture tracking data with the ARDB and we are also developing a data exchange agreement with Stoyan Nikolov of Bulgarian Society for Protection of Birds to share Egyptian Vulture data. We would like to explore further collaborations to mobilise these movement data.

In 2015 we were fortunate to host Naomi Stratton for a few days at Habitat Info. Naomi is interested in raptor migration and has been very helpful in starting a new data table for the ARDB of migration counts at migration bottleneck sites. There are only a small number of these major bottleneck sites where large soaring birds move in and out of the African continent so these sites and counts afford a great opportunity to monitor the health of these mobile populations. At the moment count data are scattered among numerous organisations but have been documented by Keith Bildstein & Jorje Zalles and compiled by Birdlife for IBA sites. Naomi has helped us make a start collating these

data and we are developing a web interface which may be used for logging counts and migration routes. So we hope the ARDB can play a major role in promoting coordination of this important aspect of monitoring the passage of both Palaearctic migrants that visit Africa and also intra-African migrants.

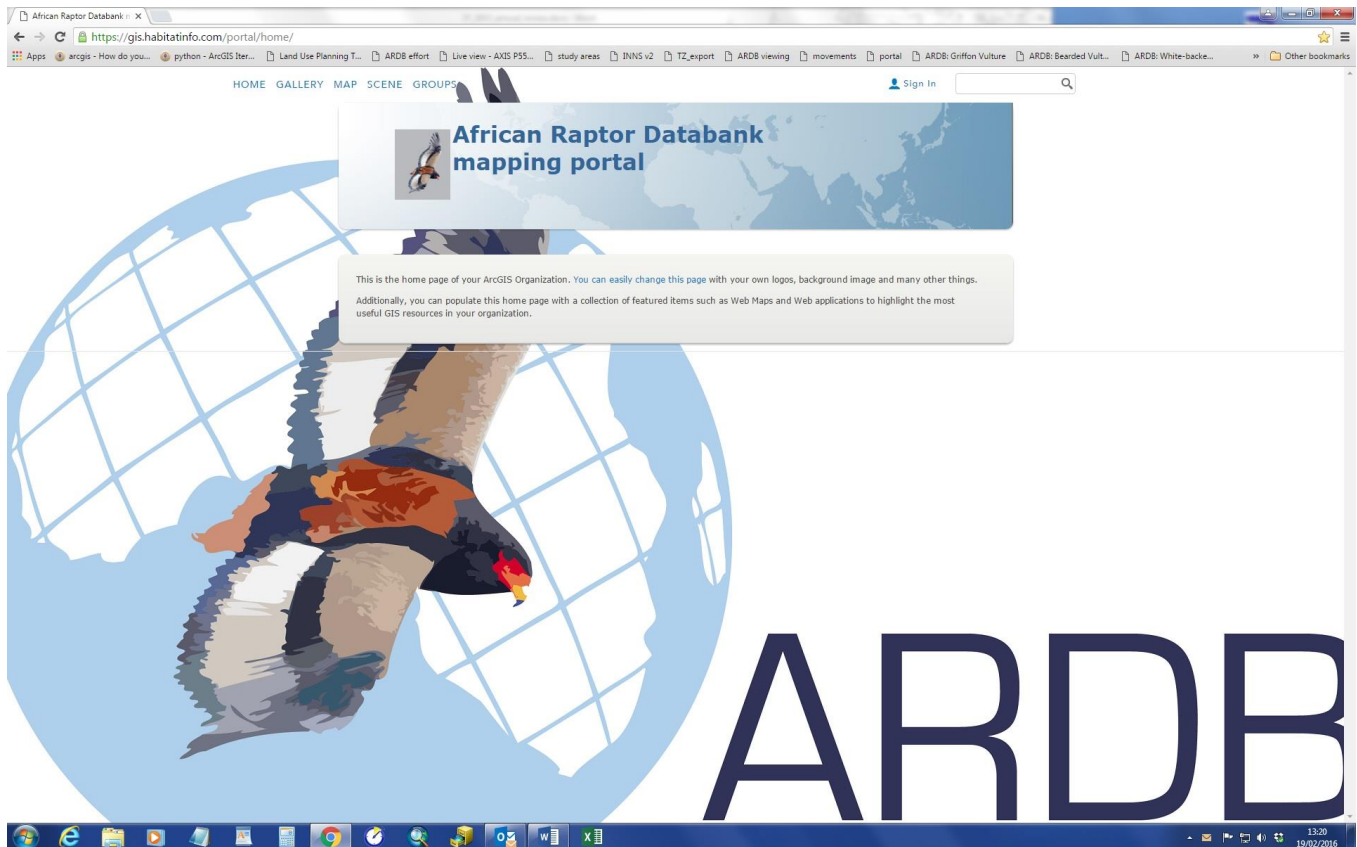
We are also grateful for help in August from Beth Thomas who spent a couple of days at Habitat Info gaining work experience. Beth assisted with mobilising spreadsheet data and by monitoring the release of 'Junior' a rehabilitated Common Buzzard from our new hacking station at Habitat Info capably constructed by Marc Huggard. We hope Beth goes on to develop her interests in raptor biology in her new career at Oxford University.



The new apps and web apps are not everybody's cup of tea and there are a number of raptor observers who still prefer to send us sightings in a spreadsheet. With different ways of recording coordinates and spelling species names these data can be very time-consuming to load into the database while maintaining data integrity. Without Tim at Habitat Info it has been difficult to remain on top of all the different formats of data coming in to the ARDB so we needed a solution for the hours it takes to sort and format incoming data. Andrew Rayner, our developer, came to the rescue! Andrew has taken our proforma spreadsheet and developed it for data quality control

(available: http://www.habitatinfo.com/wp-content/uploads/ARDB/documents/ARDB_PROFORMA.xlt)

This new version has the most relevant fields and you can look up and choose values for most of these fields from a dropdown listing. Incorrect values are highlighted in red text to notify that these won't be imported. At the same time we have installed our own Portal for ArcGIS on our server at Habitat Info. This wonderful facility enabled by The Peregrine Fund ESRI licence allows any ARDB user to literally drag their spreadsheet (csv format) onto a map and it plots the records instantly for the user to check their locations. Once the user is happy with their data they forward the link to us. We get a chance to evaluate the data before it goes into the database and then Andrew has written a very elegant javascript webpage which imports the records from the map link in seconds rather than in hours! Phew. If you prefer spreadsheets to Apps then please contact Rob (rob.davies@habitatinfo.com) to make full use of this facility.



To show how any funds received to the ARDB have been allocated, along with other project inputs, we have prepared a financial summary for the entire project lifespan so far 2011-2015:

http://www.habitatinfo.com/ardb/ARDB_income_expenditure_2011_2015.pdf

We continue to write proposals to fund the acquisition, management and analysis of raptor records. We will keep you informed if we are successful with any of these.

With best wishes for the New Year,

Rob & the ARDB team

APPENDIX. ARDB contributions via spreadsheet datasets for 2015 by created user:

DATA SOURCE	REGION	RECORD COUNT
Tanzania Bird Atlas	Tanzania	3472
Hichem Azafazf	Tunisia	1343
Yilma D Abebe	Ethiopia	1128
Chris Brown	Namibia (historical)	764
Evan Buechley, Sisay Seyfu, Alazar Daka	Ethiopia	321
Oliver Fox	Senegambia	312
Ralph Buij	Cameroon and W Africa	219
Campbell Murn	Mozambique (& Zimbabwe)	214
Jean DELANNOY	Senegal	196
WABDaB (Joost Brouwer & Ulf Liedén)	West Africa	141
Evan Buechley	Ethiopia	137
Andre Botha	Kruger Rivers Survey	123
Lizanne Roxburgh	Malawi	112
Darcy Ogada & colleagues	Kenya Rift Valley & Ethiopia	46
Miguel Lecoq	Guinea-Bissau & Cape Verde Islands	40
Lion Encounter (Leigh Webb)	Zimbabwe	36
Cooperative of Guides of Niokolo-Koba (J. Rose)	Ornithological Survey in Niokolo-Koba NP, Senegal	35
Lion Guardians (Stephanie Dolrenry)	Amboseli NP, Kenya	28
Yvonne de Jong & Tom Butynski	Northern Uganda	4
Etienne Marais	Caprivi Redneck Buzzard	1
		8672

APPENDIX. ARDB contributions via the App for 2015 by created user:

OBSERVER(s)	record count
Andre Botha	5290
Dirk van Stuyvenberg	918
Mark Brown	803
Joseph Heymans	702
Andy Branfield	606
Claire Kolberg, Holger Kolberg	593
Brian Waswala	537
Simon Thomsett	527
Stefan van Stuyvenberg	518
Crystelle Wilson	421
Clive Barlow	411
Steven Evans	384
Mark Dixon, Amanda Judson	374
Holger Kolberg	331
Rob Thomson	307
Bernard Madden, Antje, Gisela	288
Martin Odino	286
Walter Jubber	271
Dirk Human	255
ashwell glasson	253
Jaco Smith	237
Bernard Madden, Antje	219
Robin Whytock	205
Dawie de Swardt	203
Munir Virani, david mills	172
Marga Hagens	161
Etienne Albertyn	160
Washington Wachira	154
Bernard Madden	142
Loutjie SteenbergSteenberg	135
Darcy Ogada	118
bruce wardsmith	116
Rob Davies	89
Jacqui Badenhorst	87
Ben Hoffman	74
Kyle Mannheim	70
Munir Virani	67
Shannon Hoffman	64
Anja Teroerde, Etienne Albertyn	58
Hennie deBeer	55
Marlei Martins	52
Marlei Martins, Dr Rob Simmons	51
Ara Monadjem	50
Gisela Madden	49
priscilla watson	49
Anja Teroerde	47
Dr Rob Simmons	42
Holger Kolberg, Claire Kolberg	39
Stratton Hatfield	30
Shannon Hoffman, Tim Van Der Meer	29
unspecified observers field	28

Gareth Tate	28
Munir Virani, david mills, simon	24
Shannon Hoffman, Ben Hoffman	24
Danie Brand	23
Damian Newmarch	21
Rob Thomson, Gail Thomson	16
Munir Virani, simon	15
Munir Virani, kabir, simon	14
Shannon Hoffman, Jan De Waal	14
Joshua Kleyn	13
Munir Virani, kabir, stratton, simon	13
Owen Forsberg	12
clive watson	11
Munir Virani, kaisaan, zayan	11
Claire Kolberg	9
Simon Thomsett, charlie hamilton james	9
Jacques Bester, Hennie Bester	8
Katie Reese	8
Shannon Hoffman, Ben Hoffman, Sonja Kruger	6
David Pretorius	5
Joshua Kleyn, Carey Kleyn	5
danny sapsford	4
Troye Weston	4
andrew rayner	3
Hennie Bester	3
Joshua Kleyn, Willem Kleyn	3
priscilla watson, clive watson	3
Rob Simmons	3
Shannon Hoffman, Josh Kleyn	3
Ben Hoffman, Shannon hoffman	2
Calvin Harris	2
Dr Rob Simmons, Marlei Martins	2
Joshua Kleyn, Jan De Waal, Shannon Hoffmam	2
Joubert Heymans	2
Marlei Martins, Craig Campbell	2
Munir Virani, simon, kabir	2
Rob Davies, Laurie Davies	2
Rob Davies, Robert Kenward, Torgeir Nygard	2
Shannon Hoffman, Jan De Waal, Kayla Asherwood, shayna asherwood	2
Hennie Bester, Jacques Bester	1
Ig Viljoen	1
Jacques Bester	1
Joshua Kleyn, Carey Kleyn, Andrew Kleyn	1
Rob Simmons, marlei Martins	1
Shannon Hoffman, Mike Neetling	1
Shayne Dalton	1
Simon Thomsett, charlie hamilton james, peter bridgford	1