African Raptor Databank

INTRODUCTORY & GETTING STARTED GUIDE

Dear All

I am very pleased to be able to announce that there is now a working database facility available to you to pool and share sightings and records of African birds of prey. Through the listserver you will be receiving monthly updates on the growth and development of this database. This is a collaborative project involving Habitat Info, The Peregrine Fund, the Bird of Prey Working Group and other partners and individuals described in this email. You may want to print this introduction and background to the project but the first few paragraphs should get you up and running with it (we will post a copy on the website at the first link below, along with the more formal project overview document containing objectives, terms etc.).

the African Raptor Databank is now fully operational at the following links:

1. http://www.habitatinfo.com/ardb (documentation, terms, instructions, links to the live apps)
2. http://gis.habitatinfo.com/flexviewers/ardb (data viewer)

Once you are registered you can view and query the current ARDB data holdings at the second link (you will need Adobe Flash on your computer). You will find sample spreadsheets at the first link which enable you to send in existing data in a format which matches the database schema. If you have a smartphone or tablet you can also harness the device GPS and our customised apps to enter your raptor records into the shared database in real time (photos and sound recordings can be readily uploaded and accessed by all). At the moment these apps require a connection to the internet or to a cellular network so they are really best suited for you to submit records from the comfort of your homes, offices or places with fast cellphone networks. But we realise that the big need is for the apps to work in all remote field locations across Africa and on the road so in the course of this year we shall be releasing various offline recording solutions. For those that do have a leaning towards gadgets and GIS you can already get started on windows mobile devices. For those of you not wanting to be fussed by the technological aspects please be patient because we will be releasing simple-to-use offline apps for apple and android phones / tablets in the year ahead and you will be able to feed in your suggestions on what you wish to see in these. But please sign up and start using the facility as soon as you are able to..

We introduced the project formally at the Pan African Ornithological Congress last October and have been able to act on some early feedback from that meeting, notably implementing security so that nest and vulture records may only be viewed by the user who created them. In order to achieve this security and also to future-proof the project with software developments as best we can, you will need two log-ins to access all the information: one to ArcGIS Online in order to become part of the ARDB project and gain access to background mapping and mobile apps provided by ESRI (free, and lots of other benefits if you want to

share spatial data); and the second login to our SQL Server geodatabase in the office in order to create, edit and delete your data points and see the secured services that we will be sending out. When you send us personal information this enables us to build the knowledge base of raptor experts but we will hold this personal information securely and take all reasonable steps to protect your privacy. It is best to get the ArcGIS Online registration sorted first then proceed to the database registration, and finally accept our invitation to join the ARDB group on ArcGIS Online. These steps are fully and clearly explained in the instructions on the website. Sorry about the two registrations but we cannot avoid it at this stage. We ask that you use the same username for both and you may wish to use the same password if you want to avoid confusion. (detailed instructions at the top link)

This project has had quite a gestation period. The initial concept was to use GIS technologies to perform distribution modelling on African birds of prey in relation to the habitats datasets that are improving continually and this is still our aim This hasn't been done before and there is a great need (highlighted by James recently) to improve our conservation status assessments. We carried out a pilot study on Madagascar raptors with The Peregrine Fund and the University of Pretoria (Jacollete Adam) and a literature review of habitat requirements for southern African raptors with the University of Cape Town (Sean Ranger).   There have been a couple of field trips to test the data collection methods and we were fortunate to benefit from the epic trans Africa raptor road count by Simon Thomsett and Laila Bahaa El Din. We plan to produce a conservation atlas for African raptors as an output (both freely available online, and also a hard copy production) and in the process develop expertise in the field.

There is a bit of a plethora of bird and wildlife recording schemes coming out at the moment and birders must be wondering which ones to participate with. Well we are going to try to keep an open door on free data exchange with other schemes so your data may still reach us if submitted to these other schemes and vice versa but we cannot guarantee this. The reaction so far is that potential users seem to like the very focused nature of the ARDB and to be able to see how their information is going to be used for the good of conservation. I think what the ARDB will also be able to offer which other recording schemes do not is specialised fields and structure to accommodate the methods and nature of raptor recording.

Since the start of this, quite a lot has happened with the technology and the mapping elements have now been made much more readily available to users through the web and through mobile phone technologies with GPS. It has become possible for almost anyone across the whole of Africa to get involved and help us build the database without requiring any knowledge of GIS or gadget wizardry. In the process, offering a wonderful opportunity for us to spread the word about the importance of birds of prey as indicators of healthy and intact ecosystems to the wider community and to schools. So the education potential of the project has really flourished and we plan to closely couple the recording apps with future identification guides for the mobile devices.

The other highly significant development since inception has been the arrival and rapid uptake of this medium, the African Raptor Listserver, capably provided by Munir Virani and

colleagues. It has been really exciting to see its adoption by raptor experts and enthusiasts across the whole of this vast continent and we have really needed this transboundary communication in order to implement conservation across the full huge ranges occupied by our species of interest. We now have a situation in which large volumes of information and knowledge are being exchanged and we do need to find ways of collating it all and making it accessible to future generations of conservationists. The African Raptors website with the wonderful interviews by Marcus Jais and also the recent distillation of knowledge on Hooded Vultures into a published article have been fine examples of this. But with the sightings and photographs of where raptors occur and what they are, we do need a facility to provide a shared home for these and we offer the ARDB for this role and would like to design it very closely aligned to this listserver and the African raptors website.

The project had a major breakthrough last year when The Peregrine Fund generously agreed to fund the ArcGIS Server software (Enterprise edition which allows unlimited mobile deployments). Thanks very much to Munir Virani and Rick Watson. ArcGIS Server is ESRI's flagship product which is normally prohibitively expensive for us in the conservation world but ESRI characteristically allowed us to apply through the ESRI grant scheme and we qualified to purchase it at 3% of the normal retail cost. ESRI stands for Environmental Systems Research Institute and they have a fantastic record of supporting conservation across the world. HabitatINFO supplied the hardware and connections and all of a sudden we are airborne with the project at last. We have also had the good fortune to have three students arrive as interns at HabitatINFO who have been able to help develop the initial database. Zoe Taylor digitised the whole of the Snow Atlas providing a great historical record (15900 records) already for sub-Saharan Africa and Sarah Wigley is now loading road count data from East Africa (kindly supplied by Darcy Ogada, Simon Thomsett, Laila Bahaa El Din) and atlas data from West Africa (kindly shared with us by Joost Brouwer and Ulf of NiBDaB) and East Africa (kindly shared with us by Neil Baker and colleagues at the Tanzania Bird Atlas Project). Negotiations have commenced with SABAP and G-bird about potential data exchange between the projects.

Morgan Commins has made a start on extracting mountainous habitat data for the African continent from the shuttle radar data. Obviously cliffs being an important determinant of nesting habitat for many species. There are many other Africa-wide habitat datasets that we now house at HabitatINFO that have been contributed to this project by UNEP-WCMC, the World Bank, NASA, IIASA, AfriPop, and further datasets that we have developed in collaboration with other partners notably OneWorld Group in Cape Town.

Who is running it and what are the terms? - well we want the data and the initiative to be owned by the contributors but we ask your permission to use your data for the good of raptor conservation in Africa under the banner of the ARDB project. We needed to make a start with it somehow so we have set up an initial group of regional coordinators including Munir Virani and Darcy Ogada for East Africa, Andre Botha in southern Africa, and Ralph Buij and Joost Brouwer in West Africa. We still need representation in North Africa and have had some negotiation on this with Birdlife Tunisia. Keith Bildstein has been helping with migratory bottleneck counts and training. The database and software are being managed by Habitat Info and The Peregrine Fund. We dont have any major funding for the project at the moment but we dont believe we need that for the live data gathering period over next

five years, although funding would speed up the development of the offline apps. So the project is very much a citizen science initiative and based largely on volunteer effort. Full terms for intended data use are available at the website. But in brief, there will be no profit making from the database which will be made freely available to education and conservation projects where possible, but we do reserve the right to charge for our time servicing data requests from commercial operators or for those taking up a significant amount of time. We will take the necessary steps to protect information and species that are considered sensitive and this can be continually reviewed. Any revenue from data requests will be declared and used entirely for ARDB development, or African raptor conservation projects if there is a surplus.

We would like to invite students and interns to participate with the task of data mobilisation, particularly the large volumes of historical records held in a variety of museums. We hope that you will be able to share road count data and other more current collections of data. We have designed one database schema to catch a variety of different types of records including: ad hoc, nest and breeding, mortality, specimens, static counts, road counts, walking transect data. The result is a lot of fields so we have simplified the data entry in the live apps by providing different modules for the different record types, starting with ad hoc sightings and nest / breeding records. It is very important to distinguish breeding observations from others for security reasons but also for the habitat modelling later on.. a breeding record represents the species' decision that this is correct habitat so is a more powerful indicator of habitat than an observation of a bird on the move.

Modules for the live recording of other record types will follow shortly. There is great value in road count data, transect and static counts where observer effort is recorded because this provides a means for standardising results across regions and time periods. But these also require adaptation which are building into the database to accommodate the observer effort and to link this to the records. At the moment we offer simple blank spreadsheets on the website for road count data and ad hoc sightings which at least will enable you to submit existing records in a format compatible with the ARDB.

The software offers us a nice facility for digitising regular road routes and then dropping in your data using just the odometer reading to a precision of +/- 100m providing that the route is uniquely identified and that the use of the route is exactly the same for different observers. We plan to develop a database of regular routes and automatic web entry procedures for the count data to be attached in the future but for the moment it is easiest if the data are received in the spreadsheets provided.

We have identified 153 species of raptors which are known for Africa and its islands, but up to 165 subspecies are regularly recorded if we wish to separate Barbary from Peregrine, Yellow-billed from Black Kite etc. So it was quite a challenge to settle on the species list and try to retain some flexibility for evolution of names and to allow entering of subspecies info if you prefer. We have allocated numbers to the species from 1 to 153 and then we have multiplied this by ten to provide ten allocations within each species for subspecies. Anything ending in 0 can be taken as a bin for undifferentiated subspecies of that species, anything ending in 1 is being reserved for the nominate subspecies leaving eight remaining classes within each species. Converting subspecies numbers to species then becomes a

simple matter of dividing by 10 and rounding down. The species listing is fundamental to the ARDB so we publish it on the website with English names and suggested abbreviations and offer this up for scrutiny. You can also download the spreadsheet in which we match against scientific, French names and WorldBird Database numbers. We would be very grateful for any corrections of spelling and especially for help with French names and feel free to submit other translations by returning the spreadsheet with changed records highlighted. The species numbering system is important to get right from the start because this is what the mobile phones will be sending in from the field as it is much less data than the full names. Fortunately on the phone you still see the text version rather than the number.

The live apps are being designed to take as much of the headache out of biological recording as possible. The biggest plus is that you will no longer have to be bothered with grid references, GPS settings and converting to decimal degrees. The mapping software takes care of all of that. And date and time will be recorded automatically along with the user name who is logged in as the 'record creator'. The geodatabase offers us powerful functions including who last edited a record and when and archiving on the database keeps the historical record of all data entered even after it has been deleted. We keep another field open to you though for observer in the event that the record creator is not the person who saw the bird. If you leave this blank then we will assume they are the same. When we get really fancy we will be able to populate the observer field with the creator field and allow you to edit it if you need to. So that takes care of the WHO, the WHEN, and the WHERE. Leaving just the WHAT fields and the HOW field (also known as record type) to worry about. We guess the ideal for most experts would be for the machine to guess the species name from the first few letters entered and we will try to deliver this, but non-experts may need a bit more help than this so for the moment we provide one system whereby you first choose the raptor group that the species belongs to, i.e. harrier / buzzard etc, and then you are provided with a dropdown list for all the species in that group. This is much more practical than a dropdown list of all 165 subspecies.. This system will adapt well when coupled with identification guides but we will try to provide multiple options for you in the future including showing the scientific and French names alongside English names and vice versa.

We are really glad to be able to make this facility available and hope very much that it fulfils all your requirements for collective management of our data on African raptors.

I would like to thank the regional coordinators and Munir Virani in particular, and The Peregrine Fund, for helping to make this project finally happen!

Rob Davies