



Who's who in the digital zoo?

The business of the Animal Demography Unit can be summarised in three phrases: digital biodiversity, citizen science and statistical ecology.

DIGITAL BIODIVERSITY

The atlas projects, two for birds and one each for frogs, reptiles and butterflies, have generated digital descriptions of the biodiversity of southern Africa. Add the digital record of bird ringing spanning six decades and nearly two decades of counts of waterbirds and large terrestrial birds, and include the databases of other projects, and you have one of the world's leading digital biodiversity resources all under one roof.



Mike Ford and Erna Rabie extracting weavers and Red-billed Queleas at Nuwerus farm, near Worcester. Bird ringing can provide valuable data for statistical analysis.

Not only does the ADU assemble digital data in the traditional sense, it also curates digital images. New photographic techniques have changed the digital biodiversity landscape, presenting opportunities which the ADU has been a world leader at exploiting. The 'virtual museum' is a concept developed at the ADU. A digital image of a species, together with the date and location where it was 'captured', is equivalent to a specimen in a museum, and the reptile and butterfly atlases have benefited hugely from their virtual museums. All these images – sometimes hundreds of pictures of a species from across its range in southern Africa – are available to taxonomists to examine and compare. The heart of the ADU is a vast digital museum.

The ADU does not 'own' the data; we view it as a resource to be shared. The barrier between our databases and making the information on them available for download is the cost of developing the systems to make the data accessible.

CITIZEN SCIENCE

The data originates from the citizen scientists who participate in our projects. We really appreciate the contributions that ADU citizen scientists make to our projects. Each count you make, each bird list you produce and each digital image you submit is a piece in the jigsaw puzzle of biodiversity. If you are not yet one of our citizen scientists, why not come on board, help to fill the gaps in the puzzle and collect the data that you are uniquely placed to contribute?



DIETER OSCHADLEUS (2)

Members of the Worcester Bird Club watching the ringing of Red-billed Queleas at Nuwerus farm.

STATISTICAL ECOLOGY

However large the digital zoo, however impressive the databases in the eyes of the information scientists who design them, they are of no use by themselves. Someone has to summarise the data into information, find the patterns and extract the messages. Often the message relates to the conservation of a species.

So how do we assemble the great ADU jigsaw puzzle, and where does your bird list fit into the big picture? The answer is statistical ecology, a growing discipline that puts biology into statistics and statistics into biology. Ultimately, it takes conservation decisions that are based on solid quantitative foundations. It is this discipline that incorporates your data.

This is the academic part of the ADU and why we are based on the campus of a university, employ people with PhDs and train postgraduate students. Eleven PhDs and eight MScs have graduated from the ADU since 2002. The core of each of their research projects has been the application of statistical ecology, and many have made use of data collected by citizen scientists. □