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PhD thesis: The use of ringing data in the study of climatic influences on the vital rates of (locally) common passerines in southern Africa.

After 14 years in ICT I discovered I should have become a biologist when I arrived in Nairobi for my first visit to Africa in 1997. Starting in 2004 I studied for two years at the College of African Wildlife Management in Moshi, Tanzania, for a Diploma in Wildlife Management. In 2006 I volunteered for four months at the Rare and Endangered Species Trust in Otjiwarongo, Namibia, where I collected data on the endangered Cape Griffon Vulture *Gyps coprotheres* and looked after the non-releasable raptors. In 2007 the Diploma in Wildlife Management gave me access to the Masters Conservation Biology programme at Manchester Metropolitan University. My thesis was on the population status and habitat associations of the Madeira Buzzard *Buteo buteo harterti*, a disputed subspecies of the Common Buzzard. I completed my Masters with Distinction in 2009.

I now know that my skills as an analyst are best suited to statistical ecology. Res Altwegg (SEEC) is my supervisor.

PhD

My PhD subjects are the African Reed Warbler *Acrocephalus baeticatus*, insectivorous passerines in a wetland and fynbos and the Sociable Weaver *Philetairus socius*.

Chapter 1

Climatic influences on survival of migratory African Reed Warblers *Acrocephalus baeticatus* in South Africa.



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Abstract:

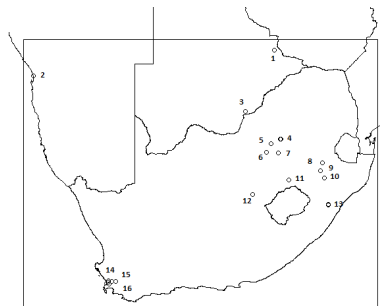
An analysis of capture-mark-recapture data (1998-2010) in MARK investigated the influence of climatic conditions in the breeding area, Paarl in the Western Cape, and the wintering area, Central Africa around the Congo Basin. Mean temperature (Aug-Apr) had a positive effect on survival: an increase of 1.6 °C was associated with an increase in annual survival from 0.69 to 0.88.

Status:

In press - journal Ardea.

Chapter 2

Does seasonality drive spatial patterns in demography? Variation in survival in African reed warblers *Acrocephalus baeticatus* across southern Africa does not reflect global patterns.



Abstract:

Northern, temperate species generally have large clutch sizes and low survival. Southern, temperate species exhibit the opposite. The main theories regarding the driving mechanisms are founded on the differing environmental seasonality of these zones (higher seasonality in the North). We investigated whether the same patterns arose among populations within a species. We analysed capture-mark-recapture data (1998-2010) in sixteen vegetation units spread across four biomes in southern Africa. We used hierarchical models to estimate resident adult survival and its relation to latitude and the seasonality of the different environments of the breeding habitats. Survival ranged from 0.49 to 0.83. We did not find a latitudinal trend in survival or a clear link between seasonality and survival.

Status:

Published in Ecology and Evolution 2014; 4(7), pp 889-898.

Chapter 3

Synchronicity in survival of avian insectivore assemblages in a wetland and fynbos in South Africa.



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Abstract:

Capture-mark-recapture data of four wetland species covering 1999-2013 and three fynbos species covering 2000-2007 were analysed - separately - in a hierarchical model with an asynchronous (species-specific) variance component and a synchronous (common) variance component. These components from a model without and one with a climatic covariate enabled us to estimate the forcing effect of the climatic variation as a synchronizing and desynchronizing agent. Both synchronicity and asynchronicity in the more seasonal wetland were larger than in the climatically more stable fynbos site. We did not find clear evidence of climatic forcing. Our findings did quantify the dynamics within the species assemblages and provided the first survival estimates of several African endemics including two with a severely restricted range.

Status:

Completed manuscript for dissertation.

Chapter 4

Population dynamics of the Sociable Weaver *Philetairus socius* at the western edge of its range.



Abstract:

Using capture-mark-recapture and productivity data and colony counts we treat 25 colonies as one population in an integrated population model to determine population dynamics. We investigate which vital rate drives those dynamics, investigate the influence of climatic variation on those vital rates, and use the population model to predict the dynamics over the next five years.

Collaboration with Roger Pradel (CEFE, Montpellier).

Status:

Write-up phase.

Publications

Jansen, D.Y.M., Wilson, A.M. & Altwegg, R. (in press) Climatic influences on survival of migratory African Reed Warblers *Acrocephalus baeticatus* in South Africa. *Ardea*. doi:xx.xxxxxxxx.

Jansen, D.Y.M., Abadi, F., Harebottle, D. & Altwegg, R. (2014) Does seasonality drive spatial patterns in demography? Variation in survival in African reed warblers *Acrocephalus baeticatus* across southern Africa does not reflect global patterns. *Ecology and Evolution*, **4**, 889-898.

Jansen, D.Y.M. 2013. Population survey of the common buzzard *Buteo buteo* on Madeira Island (Portugal). *Ardeola*, **59**, 145-155.

Conference talks

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| July 2014 | ISEC 2014, Centre for Functional and Evolutionary Ecology (CEFE-CNRS), France. |
| Apr 2013 | EURING 2013, University of Georgia, USA. |
| Aug 2012 | 13 th Pan-African Ornithological Congress, Tanzania (poster presentation). |

Last updated 16 Dec 2015
