

Darwin Initiative: Half Year Report

(due 31 October 2007)

Project Ref. No.	15/002
Project Title	Integrating Crane Conservation with Sustainable Habitat Utilisation
Country(ies)	South Africa
UK Organisation	Zoological Society of London
Collaborator(s)	Principal: South African Crane Working Group, Endangered Wildlife Trust
Project Leader	Dr RA Pettifor
Report date	October 2007
Report No. (HYR 1/2/3/4)	2
Project website	N/A

1. Outline progress over the last 6 months (April – September) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up).

Working for Wetlands Partnership

In April, 2007, Dr. Raj Amin (ZSL) and Kirsten Oliver (Darwin db/GIS employee) had a meeting with Mbavhi Mkuhro (db/GIS manager) and John Dini (Manager) of the Working for Wetlands programme. Kirsten Oliver now represents SACWG/DI on the National Inventory Committee. SACWG/DI has ground-truthed 263 wetlands over the past six months. Input into wetland rehabilitation planning continues, particularly in the Eastern Cape. Two SACWG employees, Tanya Smith and Christelle Pauw, have attended a wetland training course, including hands-on rehabilitation and wetland delineation.

Strategic inputs into the Integrated Environmental Management Process

An important crane area, the central lakes district of Mpumalanga, is under threat of open cast coal mining. The area is unique in South Africa with regards geology, biodiversity and unique peatland systems, but unfortunately has never received protected area status. Mining and prospecting rights have now been granted for 90% of the properties in the district. There has been a considerable outcry from environmental groups, but on the other hand the unemployment rate in the area is high. A symposium was arranged by the University of the Witwatersrand and addressed by the Premier of the Province to find a way forward. Moves are now afoot to make a concerted effort to increase work opportunities in the area through eco-tourism and here SACWG/DI is playing a pivotal role, with Christelle Pauw assisting with developing birding routes and helping train unemployed individuals as bird guides. She is also acting as a go between farmers and the bird guides to get access for tour groups.

The Annual SACWG Workshop

The workshop took place on 6-7 September and was well attended with 26 delegates from across South Africa. There was representation from tertiary institutions, our provincial conservation department partners and other conservation NGOs. Papers presented ranged from land stewardship initiatives to the use of genetics in conservation. There is a major opportunity for the SACWG/DI to become an active partner in the KwaZulu-Natal Stewardship Programme and through participation ensure that critical crane habitat receives contract reserve status. The development of sensitivity maps will be crucial in this process.

Development of Fixed Crane Monitoring Routes

We have established 15 fixed road strip count monitoring routes (3 per bioregion) across South Africa based on the CAR methodology developed by our partner the ADU. The routes were selected based on expert opinion from all the regional coordinators and then tested against the

national land cover of the greater crane region to ensure that all routes are representative of their respective habitats. Routes are monitored bi-monthly and all land use changes as well as detailed crane data are recorded and fed into the database. This system will go a long way in monitoring long term trends in crane habitat use, seasonal movements and density, as well as habitat change in response to climate and other changes. It is the first time in the history of SACWG that such a system has been implemented.

Aerial Surveys

A fixed route aerial survey was completed in KwaZulu-Natal to establish Wattled Crane breeding activity and census the crane population. This was done in partnership with Ezemvelo KZN-Wildlife. 453 Blue Cranes, 2718 Grey Crowned Cranes and 201 Wattled Cranes were sighted during the aerial survey.

Wattled Crane breeding success surveys

During this reporting period 51 Wattled Crane nest sites have been monitored for breeding activity. Thus far one chick has been ringed. It is unclear at this stage how many will raise chicks to fledging.

Wattled Crane Nest Site Selection Study

Katerina Wojtaszekova, from the University of Leeds, is currently doing the fieldwork for her MSc project, supervised in South Africa by Leon Theron and back here by Drs Richard Pettifor and Raj Amin. At the moment she is measuring the physical attributes around existing, historical and test sites and will soon proceed to do a botanical survey of the above. The end product will be to test for local and landscape level differences between active, historic (but no longer used) and random breeding sites for this Critically Endangered species, particularly in relation to wetland characteristics, afforestation and land-use

Fitting of Cellular Tracking Devices to Blue Cranes

We have made attempts to capture individual cranes using an approved chemical baiting technique (as used by International Crane Foundation), but have thus far not been successful. We will investigate the use of mechanical capture techniques if this method keeps failing.

Setting up of the GIS

Substantial spatial layers with which to populate the GIS has been sourced and cleaned. Layers include the national powerline grid, digital elevation models, national vegetation map and national landcover. Kirsten Oliver has also attended the GIMS (South African ESRI agents) National Users Conference which was most useful. She has established links with the Eskom (national power supplier) GIS unit who would like to work closer with SACWG/DI to ensure improved mitigation of bird powerline collisions and electrocutions. Furthermore, GIMS has agreed to assist with Spatial Analysis training.

Development of a Relational Database

After much deliberation over the course of action for setting up a fully-functioning database, we have settled on a complete Access database that will be run from the KZN office and all changes and modifications will be carried out by Kirsten Oliver. Over the last few months we have, in collaboration with all field workers, developed a strategy for data collection and storage that will form the structure of the tables and relationships within the database. Field workers are already collecting data in an Excel field form that will feed directly into the database at the end of each month. The old data, as collected by numerous field workers and staff of SACWG over the past decade have been formatted to follow the same structure as the new database, and will be inserted into the database before the end of 2007. We are in the process of formulating a number of queries and regular reports that will be asked of the database on a regular basis, and will shortly be pursuing the migration to a geodatabase to make use of the spatial component of the data for analysis and visualization.

GIS Training Course

Dr Raj Amin and Kirsten Oliver provided a week-long GIS training workshop that was well attended and provided valuable training to SACWG staff and some of our key partners notably members of the Ezemvelo KZN-Wildlife Land Stewardship team and Mondi Wetlands Project.

RA Pettifor received unsolicited but highly complementary feedback of Raj's training input from some participants (available on request).

Statistical Analyses of CAR data.

RA Pettifor has spent over a month attempting to analyse the CAR count data in a statistically correct and robust manner. Unfortunately these data are non-Normally distributed, and standard approaches (Poisson, negative binomial etc) do not fit the data properly. Robust overall trends can be achieved, but we cannot do the more complex comparisons of variance within and between routes that was anticipated through use of hierarchical mixed modelling. I am collaborating with various statistical colleagues on these issues.

Population Viability Modelling

In excess of two months has been spent by RA Pettifor developing "meta-population" models with variable movement between regions, using Vortex. Extensive sensitivity analyses have been carried out on both "single population" and "5 sub-population" stable models. In addition, we have a French MSc student carrying out much more complex modelling using software developed by a French colleague (Unified Life Models). She is being co-supervised by myself and Dr C Bessa-Gomes. She will present her results at the January 2008 training workshop, where she will receive feedback on model structure and parameterisation.

Environmental Education and Dissemination

EE per se under the leadership of the CLG (Conservation Leadership Group, EWT) is still problematic (see 2 below). On the other hand, as evidenced above we continue excellent collaborations with our various partners (both governmental, NGO and business (e.g. Eskom – see also below)). Frequent contact with farmers and farm-workers continues on an almost daily basis by each field worker.

REQUESTED RESPONSES TO REVIEW OF ANNUAL REPORT

Our reviewer asked us to address three areas in this half-yearly report, namely progress or otherwise on 1) Bursaries; 2) Afforestation; and 3) Regional contacts.

1) Bursaries. The South African academic year runs from January through to December, with students being present from February onwards. Leon and I each approached senior ecologists whom we knew at Universities of KwaZulu-Natal, Rhodes, Cape Town and Witwatersrand, as well as sending A4 posters of the opportunities to named lecturers at various other Universities and Technicons. As mentioned in the annual report, we were offering bursaries of up to ZAR 30 000: a considerable sum of money to students. We also listed half a dozen potential projects, some suitable for BSc Hons/BTECs and others for MSc's (or modified to suit either). We have not had a single response, despite these A4 flyers on relevant departmental notice-boards, and direct appeals to potential students via their lecturers. I think we are confronting two issues here: firstly, many "biology" students are wanting to go on into specialisms in the biomedical sciences and other "higher earning" careers. Potential conservation scientists probably feel that experience with SANParks etc is more useful to their future career. Secondly, field work appears not to be attractive to many "biology" students – Kevin Shaw (Chief Ornithologist for Cape Nature) has projects "permanently lodged" with the Percy FitzPatrick Institute for Ornithology at UCT – he reckons on an average five-year wait for a good match between student and project. Leon and I kept our options open for as long as was feasible, but when it was clear by the end of March (when I was present in SA), we decided to use part of the resulting underspend in increasing the number of satellite tracking units that we bought – these would yield unique data (assuming we could catch the birds ...). Further, 30 tags may seem a lot, but from a statistical perspective, when looking at 15 birds in just two areas, either adult or juvenile, and either male or female, one is suddenly looking at 3 – 5 tags per "group" (not even considering failure rates of transmitters). One SACWG staff member was already undertaking a MSc, and other field staff were actively considering or already undertaking specific Darwin tasks – we therefore increased allocations re fuel – a major expense for SACWG itself.

2) Afforestation. The reviewer is perfectly correct to point out the potential value that the certification process for timber may have on positive conservation outcomes. SACWG already have direct links with the conservation arms of the major timber companies (eg Mondi, SAPPI, Bison): they attend the SACWG AGM, meet in other conservation forums, and in the case of the Eastern Cape, SACWG engages directly with the forest guards. Leon Theron and I feel this

is being adequately covered at this stage: what we are doing (especially in KZN midlands where 80% of the total of less than 100 pairs of Wattled Cranes breed) is carry out quantitative research into the effects of afforestation on breeding success and other demographic parameters, using both direct field measurements and spatial GIS analyses (conducted by the Leeds MSc student, Ms Katerina Wojtaszekova). Once we are in possession of hard data, SACWG will be able to directly approach the forestry companies with the relevant sensitivity maps, as well as involving the Ezemvelo-KZN Wildlife Stewardship programme. (As an aside, we would be interested in the source(s) of the reviewer's comments re biodiversity in different age-structured stands of commercial timber in South Africa – our experience suggests a very sterile environment compared to natural forests).

3) Regional Contacts. It is only now that I understand the reviewer to be referring to intra-African collaborators, and not referring to South African contacts, as I originally understood when reading the report. We have not taken positive steps in this regard because of internal politics at EWT where the CEO is wanting a merger between SACWG and the African Crane, Wetlands and Community Working Group, a move being resisted by SACWG staff. I was hoping to get to an ICF/ACWAC meeting in Kenya this October where a number of African range state people would have been present: unfortunately I could not make both that meeting and the Paris PVA meeting, the latter being of greater immediate importance. However, once things are sorted out at EWT, we will attempt to take this aspect of our work forward.

2. Give details of any notable problems or unexpected developments that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

My South African co-investigator, Leon-Jacques Theron, resigned from SACWG on 4 October, owing to irreconcilable differences with his manager, the CEO of EWT, namely Yolán Friedmann. The underlying problems within EWT have not yet been resolved, but if they have not been satisfactorily sorted out by the time I return from Kenya in 2 weeks, I will contact you again and seek your advice as to how best to continue. I will also need advice from DEFRA re disposal of capital items etc that we have purchased for SACWG/EWT using Darwin monies.

Have any of these issues been discussed with the Darwin Secretariat and if so, have changes been made to the original agreement?

Awaiting outcome of Emergency Board Meeting of EWT and other host country decisions

Discussed with the DI Secretariat: If necessary, upon my return to UK in mid-November 2007

Changes to the project schedule/workplan: Currently unclear

3. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

No

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan or budget should not be discussed in this report but raised with the Darwin Secretariat directly.

Please send your **completed form email** to Eilidh Young, Darwin Initiative M&E Programme at Darwin-Projects@ectf-ed.org.uk. The report should be between 1-2 pages maximum. **Please state your project reference number in the header of your email message eg Subject: 14-075 Darwin Half Year Report**