

## *Darwin Initiative Annual Report*

### Darwin Project Information

Project Ref Number	15/002
Project Title	Integrating Crane Conservation with Sustainable Habitat Utilisation
Country(ies)	Principally South Africa
UK Contract Holder Institution	Zoological Society of London
UK Partner Institution(s)	N/A
Host country Partner Institution(s)	South African Crane Working Group, Endangered Wildlife Trust (SACWG, EWT). Other host country partners are as listed in original application.
Darwin Grant Value	£ 239,577
Start/End dates of Project	1 July 2006 – 30 June 2009
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1 Apr 2007 – 31 March 2008 Annual Report #2
Project Leader Name	Richard A PETTIFOR
Project website	N/A
Author(s), date	RA Pettifor, H Prinsloo (Manager, SACWG) 5 May 2008 – re-dated 24 July 2008

### **Two key impacts on this project need to be brought to the attention of the referee and committee at the beginning of this report:**

First, in early May I fell ill with pneumonia – hence the lateness of this annual report. I informed Eilidh Young of this situation and she has been extremely understanding (and accommodating). Should proof of illness be required in terms of severity or length, please let me know & I will provide evidence from my GP and hospital.

Second, our South African co-investigator, Mr Leon Theron, resigned from SACWG at the beginning of October 2007, although he stayed in post until mid December. He was replaced in January this year by Ms Helen Prinsloo. Leon's departure and the events surrounding it, led to considerable negativity within SACWG and elsewhere. This was especially unfortunate as it followed an excellent DI training workshop in September that received unsolicited praise from the participants. However, we held another DI workshop at the end of January this year, where Helen Prinsloo and Ms Kerryn Morrison (Helen's line manager) spent half a day discussing the events of the past four months with the other SACWG staff, and by the end of the workshop I was again getting very positive feedback from everyone. So it feels as if we are back on the right track again. For various practical and logistic reasons, Leon's departure also meant that we were facing a potentially very large underspend, coupled with considerable slippage on the work front. Consequently, following discussions with my ZSL line manager I increased my time dedicated to this project, asking DEFRA for permission to increase their allocation to my salary. This was approved (see Annex 1). We are now (end July 2008) in a position where we are ahead of many of our output timelines. However, for the purposes of this report, I am restricting my reporting to the annual period April 2007 – March 2008.

## 1. Project Background

The primary objectives of this project are to ensure the continued survival of South Africa's three crane species, two listed as critically endangered and one as vulnerable, and enable the sustainable conservation of their associated habitats. We will 1) develop and train a team of South African researchers capable of providing objective scientific advice on conservation of cranes, the management of their habitats, and associated endemics, and include other African range states in this capacity development; 2) involve custodians of crane habitat, both large scale farmers and disadvantaged people, in conservation through extensive community based educational schemes; 3) leave a self-sustaining, lasting legacy including a continuing programme of data collection and analytic tools that will feed directly into the 2009 crane forward strategy. These will be achieved through a) a framework for ongoing data collection using a common model that identifies future data requirements, reporting & management needs; b) collection of new data relevant to crane conservation and habitat management; c) training in data collection and analysis, especially spatial; d) development of & training in crane-specific, spatial population models; e) development of & training in relevant educational and community awareness material; f) production of integrative forward strategy and sustainable business plan; g) production of PHVA models, crane sensitivity maps and risk assessments; h) in addition, our results will be integrated with national biodiversity and conservation planning currently being undertaken by the South African National Biodiversity Institute, particularly as it relates to the CBD.

## 2. Project Partnerships

The South African Crane Working Group (SACWG) is once again functioning strongly within the Endangered Wildlife Trust (EWT), and there is a good relationship between the UK PI and SACWG/EWT. A change in line management within EWT also means a far more active flow of information between the "African Crane Programme" and our work in South Africa with Kerryn Morrison (Manager, African Cranes, Wetlands & Communities, EWT) attending our January 2008 workshop.

The KwaZulu-Natal Crane Foundation made its facilities available to a UK MSc student, Ms Katerina Wojtaszekova – this allowed Katerina to study the habitat differences between currently active and historic nest sites of Wattled Crane (<100 pairs breeding in South Africa). She has achieved valuable results (see X below). Kevin McCann, now working within Ezemvelo KZN Wildlife Biodiversity Dept has made his Wattled Crane data available to us. Alongside Andre Rossouw (EWT Biodiversity Group), these three independent sources of data concerning Wattled Crane breeding behaviour will be used for practical conservation purposes, including informing regional Stewardship programmes (K McCann), wetland restoration through our links with Working for Wetlands, and the Johannesburg Zoo/EWT captive breeding work (Wattled Cranes, despite laying two eggs, leave the nest immediately upon hatch of the first egg. Thus Andre Rossouw carefully follows the phenology of each nest, removing the second "insurance" egg as soon as the first hatches and the young and parents disperse. This second egg is then flown to Johannesburg Zoo where it completes incubation and the chick is reared. The intention is to release these birds back into the wild.). KZN Wildlife also made a plane available for the annual census of Wattled Crane sites – these flights also afford the opportunity for the two other crane species to be counted.

The Overberg Crane Group (another of our original partners) formally merged with SACWG last year, and the ex-OCG field worker was supported by Darwin funds until the end of this financial year (March 2008). In addition, Kevin Shaw (Conservation Officer, Cape Nature), who has spent over twenty years working with the OCG, has been very supportive of our work in the Western Cape, and has made his ringing and resighting data available to us – these data stretch back to the early 1990s and are crucial for obtaining estimates of survival in these long-lived birds. Mark Andersson, Ornithologist for the Northern Cape area, also made the results of his ringing analyses available to us. These data are being used to parameterise our PVA models.

SACWG/DI has continued to have excellent relations with SANBI's Working for Wetlands. Kirsten Oliver (db & GIS manager on the project and funded by DI) sits on the National Inventory Advisory Committee and ensures that ground-truthing of wetlands undertaken by SACWG/DI feeds into the WfW geo-spatial database. However, it was flagged up in our January workshop that we become much more pro-active in getting "crane wetlands" a higher priority in the rehabilitation process. This is now being taken forward. Given that part of this project is looking at "sustainable habitat use" and that natural grasslands are *the* threatened habitat in South Africa, it is appropriate that both Helen Prinsloo, and more particularly Kirsten Oliver, are also involved in the SANBI Grassland project and the wider SA "grassland conservation community".

Many of our partners are also regularly met on an informal basis at workshops and conferences. In this context it is worth mentioning that SACWH hosted a trip around the crane "hotspots" of South Africa for George Archibald, President of the International Crane Foundation (and a partner of this project). He spoke highly of the commitment and the results obtained by SACWG in partnership with Darwin.

Other linkages: Our Population Viability Modelling was taken forward in part by a French MSc student (NAME), co-supervised by myself and a French colleague, Dr Carmen Bessa Gomes. We made use of software (ULM: Unified Life Models) that allows greater flexibility in model structure than do "off-the-shelf" packages. Cecile accompanied me to the January workshop where she presented her results to SACWG – this had the effect of showing the field workers why the collection of data were important (in contrast to my earlier workshops on population dynamics which probably seemed rather abstract (although containing practical examples of PVAs applied to practical conservation issues – e.g. my goose modelling for SNH)). In fact, one thing I have learnt as a "teacher" is that when it comes to software training, it is essentially a waste of time unless the learners are inspired to use the software quite intensively when on their own. This means that the field workers need access to their "own data" (or at least data relevant to their species/ecosystem) so that they have some incentive to explore these data using the tools and techniques they have been taught at the workshops.

Another linkage mentioned above is with Ms Katerina Wojtaszekova, an MSc student with Leeds University. She spent six months in the field, and has spent the remainder of her time working with me at ZSL. This has been a very fruitful collaboration.

### **3. Project progress**

#### **3.1 Progress in carrying out project activities**

Activities as listed in original proposal:

##### **Data Collection, Collation and Analysis**

Demographic data, particularly pertaining to fecundity, were collected by each fieldworker as requested. We were particularly keen to carry on with the protocols established the preceding breeding season that allow us to parameterise loss at each stage of the breeding cycle in order that sensitivities can be run on them (eg if clutch desertion proves important in the models, and if the field workers can show this may be due to agro-forestry operations, then mitigation can be attempted. This is not far-fetched – Tanya Smith, SACWF fieldworker in the Eastern Cape, was able to get PJ Bison to restrict felling activities within 200m of wetlands that had breeding cranes).

Attempts were made to capture “free-flying” (ie post-fledging) cranes in order to attach GPS transmitters. A concerted effort was made to bait, drug and capture cranes in September 2007. After weeks of pre-baiting the site and observing crane behaviour, the capture weekend saw very few cranes making use of the specific field and non taking the bait, probably in part reflecting a sudden change in the weather. Because of the need to have vets present since we were using alpha-chlorolose, we were unable to repeat this attempt. However, a moulting flock was found in February this year, and five birds were captured and transmitters attached to them. However, their capture occurred in an area where cell phone reception is poor – limiting the downloads to date (March 2008).

Geo-spatial Relational Database. Getting this database fully automated and “fit-for-purpose” has been a major difficulty. First, the “old” data were in very many different formats, were not cleaned, and often not compatible with current software. A considerable amount of time has been taken up tracking down, collating and cleaning these data. Second, writing the code for the data models has not been straight-forward, as Kirsten Oliver’s strengths are in GIS rather than database management – hence she has had to be trained in VBN and database development. Third, Kirsten has also been dealing with the large number of requests and queries relating to spatial data – again these latter are often not of the quality assumed (eg considerable store was invested in us receiving the National Landcover 2005 layers – these were promised at the beginning of last year, arrived at the end of the year, only covered part of the country, and were in raster format rather than the promised vector based images. On the positive side, the difficulties we have faced (and the impossibility of extracting high quality extant data) has illustrated how this database will actually be a lasting legacy to SACWG and EWT. Indeed, EWT are now implementing the proper curation of data across the working groups. If one considers the number of staff hours and salaries that have been spent collecting the “lost” data, one can appreciate their value once they are properly stored. Further, the longer these studies go on, the probable increase in value of the data too. We will certainly be making use of the data collected over the past 15 years in our final reports over the next 12 months.

Construction of PVA models. Work on these models began last year, with an MSc student from Paris developing meta-population models in ULM under the guidance of Dr Bessa Gomes and myself. In parallel I also extracted relevant parameters from statistical analyses of extant data, whether these be those collected under our direction by SACWG field staff, or longer term ringing data and other sources.

Two technical problems have presented themselves in the analyses of two important sets of data. The first are the Co-ordinated Avifaunal Roadcounts (CAR) counts undertaken twice yearly across South Africa by volunteer ornithologists, the data being collected by the Avian Demographic Unit (now Animal Demographic Unit) at the University of Cape Town (and which this Darwin programme financially contributes to running). Whilst statistically analysing the summed counts (actually counts per km driven) is straight-forward, statistical power is fairly limited because of the short time series (18 years max) and the high noise to signal ratio – I was planning to use modern multilevel modelling which would have yielded far more robust results – unfortunately the statistical assumptions of their distribution are violated. Discussion with statistical colleagues suggests that mixture models may be the way forward, but even this is not clear, and we have been unable to find time to explore these techniques (which would need developing on the part of my colleagues anyway).

The second problem relates to the quality of the resighting data of colour marked cranes. Kevin Shaw of Cape Nature has made available “his” blue crane ringing data that stretch back to 1993. Potentially the value of these data is massive. However, analyses using CMR (Capture Mark Recapture) techniques do not yield “biologically sensible” results. Essentially one fits a range of models from the most complex [(eg Survival varying by time (years) and age (juv, imm, and adult) and resighting probability (ditto) thus using 70 odd degrees of freedom] down to the most simple (S.P.) where 2 df’s are used. The change in the Aikike Information Criterion ( $\Delta AIC$ ) is used to assess the “best” model fit. We were finding those models which statistically fitted the data best were providing survival estimates that would result in rapid extinction of the blue crane population in the Western Cape! Three possibilities present themselves: 1) Western Cape (WC) birds are emigrating at high rates; 2) WC birds are dying at a high rate; or 3) the data are incorrect. 1) and 2) are unlikely from other indicators – namely that very few birds are

sighted outside of the WC bio-region (1) therefore unlikely), and the WC CAR data show an increase in numbers over time (2) therefore unlikely). We are therefore left with 3) – Kevin Shaw (who has unfortunately had a very serious illness these past six months) is looking into the third possibility.

We are confident we will solve both technical problems – they have just slowed delivery considerably. However, we are ahead of where we planned to be in terms of model development and analytic output.

Indeed, the work by Katerina Wojtaszekova has been extremely productive – her field provide data of breeding Wattled Crane sites provide quantitative measurements of their preferences (current Active sites have greater soil penetrability and more vegetation cover than Historic sites), whilst her GIS analyses of landcover characteristics at 250m, 500m and 1km radii from nests sites indicate those that are Active have more grassland, fewer crops, and much less bush and forest (commercial and natural) than do Historic sites. These results will be presented at the SACWG AGM (& the PAOC – Pan African Ornithological Congress), where Kevin McCann and other governmental employees will use these data to push for specific action plans in their region (eg Stewardship of important wetlands; involvement of Working for Wetlands; Forestry policy and planting regimes etc).

### **Scientific Training**

This is considered separately to the Environmental Education that is reported on below by Helen Prinsloo.

Three training workshops have been held over the past year, the first overlapping with the end of Reporting Year 1 (March/April 2007). This reviewed population dynamics, and concentrated on training in Excel. The second was run immediately after the SACWG AGM in September 2007, and concentrated on GIS use and associated software. This was attended by a number of people outside of SACWG and received very positive (unsolicited) feedback. The third was held over a week at the end of January 2008, where we integrated training in Vortex with refresher courses in Excel and population dynamics. This training week was particularly targeted at the learners looking at their own data and exploring the consequences of changing the various model parameters on the dynamics of “their” crane populations.

Considerable time was also given over to day-day problems that the field workers encountered in collecting data – from the mundane (“my fixed observation point on my census route is in a cutting through a mountain”) to discussions about improving resighting rates of colour-tagged (ringed) cranes, involving farmers more in the work etc.

Two of the SACWG field staff also attended a week-long training opportunity at the University of the Witwatersrand on wetland management and surveys, whilst Kirsten Oliver received intensive training in two modules of database development, code and design (again at the University of the Witwatersrand) and also attended GIMS (South African ESRI) courses for GIS modules in ArcGIS.

### **Management Recommendations and Action**

Actual recommendations to various NGO, private and governmental organisations was time-tabled for Year 3: however, one area that was highlighted in our informal discussions was the need to keep our partners updated re our work and the likely outputs. To this end it has been agreed that Helen Prinsloo and Kirsten Oliver will be more proactive in keeping partners, especially governmental conservation bodies, up to date in our activities. The work of Katerina Wojtaszekova has already achieved this within KZN owing to her extensive fieldwork and that she has remained in contact with key people within EKZNWildlife and elsewhere.

### **Reporting**

Two reports should have been undertaken this past year: 1) An interim wetland characterisation report; and 2) Financial forward strategy commissioned and received.

The wetland report has been delayed for three reasons: a) the wetland inventory has not been forthcoming from Working for Wetlands – thus although SACWG has ground-truthed well in excess of 500 wetlands, the collation of these data within WfW has been slow. However, Kirsten Oliver now sits on the National Inventory Committee and meets regularly with John Dini (the Director) and Mbavhi Mkuhro (db & GIS manager). Further, as we progress with our Risk Sensitivity Analyses (see below), so targets can be agreed in terms of both ground-truthing, delivery of an inventory, and priority of wetlands for restoration.

The second concerned commissioning a financial forward strategy to be interwoven with the SACWG Scientific Strategy to be planned in the final year. This work was to be undertaken by Ms Sharon Magro, the main fundraiser for SACWG. Unfortunately, she has moved into a new post within EWT & cannot commit to this process – we are likely to make use of Sharon's replacement once she has settled into post.

### **Environmental Education**

As part of daily conservation activities all field staff are in contact with private landowners and other rural community people including farm workers. All staff make use of these opportunities to educate these important role players on various aspects of crane and other associated endemic conservation and more importantly their respective habitats. Typically, landowners receive information on biodiversity friendly agricultural practices such as correct placement of dams, timing of grazing and fires, removal of invasive alien vegetation and rehabilitation of wetlands. Furthermore assistance is given to mitigate direct threats to cranes such as removal of bailing twine, prevention of chick drowning, marking of powerlines with bird scaring devices and advice on correct agrochemical use.

Focus during the past year was placed on visiting schools and educating learners about crane conservation and general environmental stewardship. For the reporting period, more than 2000 learners were visited by SACWG/DI staff.

In addition, CLG's Environmental Awareness Officers (EAO's) and Rural Eco Warriors (REW's) visited 164 schools and provided supplementary EE to 279 teachers, directly reaching 4999 learners. A total of 218 rural communities were also visited and interactions took place with 7769 community members.

### **3.2 Progress towards Project Outputs**

**Bioregional planning.** Data for each region have been and are still being collected. Analyses of data will start in June 2008 in order to do bioregional comparisons. In March 2008, HP, together with three other SACWG team members attended SANBI's Biodiversity Planning Forum. During this event the focus was on strengthening ties with SANBI and providing input into the ongoing bioregional planning process. HP have also met with representatives at Working for Wetlands, National Research Foundation (NRF), SANBI, Grasslands Society of Southern Africa, Mpumalanga Parks Board, Johannesburg Zoo, Ezemvelo KZN Wildlife, Cape Nature and Northern Cape Dept of Tourism, Environment & Conservation. Our relationship with regional conservation bodies is strong and well maintained. Our input is valued and will continue to feed into bioregional planning as envisaged in the proposal.

**Partnership with Working for Wetlands.** Considerable collaboration has occurred between SACWG and WfW regarding ground-truthing wetlands for the wetland inventory. Kirsten Oliver represents SACWG on the Inventory Advisory Committee of WfW and is involved in identifying key wetlands for rehabilitation efforts. SACWG field staff regularly submits GPS coordinates of wetlands in their regions and in return receive data on the status of wetlands and related species. WfW's inventory database is still in the classification and cleaning phase and little significant progress has been made during year 2 due to rapid staff movements within their organisation and the massive scale of the project. A recent meeting at the annual SANBI Biodiversity Planning Forum indicated a renewed energy in WfW's efforts to classify the wetlands spatial layer and SACWG's contributions will be very valuable. One of our main aims

for year 3 is to assist WfW in the creation of a classified wetland spatial layer, as the current layer provided by WfW is ineffectual in environmental planning and conservation work.

### **Other contacts and partnerships**

SACWG has strengthened its relationship with the EWT's African Cranes, Wetlands and Communities (ACWAC) programme. Work is done in close collaboration with this group in order to ensure a cumulative effort and not a duplicative one. This has enabled us to increase our focus on international threats to cranes in South Africa, including threats related to power lines, poisonings and illegal trade. Through this collaborative effort, we have considerably strengthened our ties with the International Crane Foundation (ICF) based in the USA. Ann Lacy (ICF) visited us and provided advice on databases, satellite tracking and harnessing for satellite trackers. This contributed to the fact that 5 blue cranes were fitted with satellite trackers and data is being received to be analysed during year 3. Later in the year we were also visited by George Archibald (ICF) and a group of American birding enthusiasts who visited all the crane regions. Georgina Ponder from Whitley Fund for Nature also visited SACWG during year 2.

SACWG is also working in close collaboration with other working groups within EWT. Data are collected for the EWT's Wildlife and Energy Interaction Group (WEIG) in order to document and mitigate the effects of power lines on cranes and other bird species. Through our collaboration with ACWAC and WEIG we will be involved in planning the location mitigation measures for power lines to be constructed across sub-Saharan Africa over the next few years. We are also providing data for the EWT's Wildlife Conflict Prevention Group (WCPG), particularly with regards to accidental and deliberate poisonings of cranes and other wildlife.

During year 2, we have also resumed the planning of a Wattled Crane Recovery Programme in collaboration with Johannesburg Zoo. Planning and implementation of this project will resume into year 3. Second eggs will be collected, artificially incubated and chicks will be reared in isolation for supplementation of wild flocks. The Zoo staff is receiving training from ICF on conducting artificial insemination in order to use the captive birds in South Africa to supply eggs for this programme.

Glenn Ramke, our regional coordinator for the Wakkerstroom Crane Conservation Project, works in close collaboration with the Botanical Society of South Africa (BotSoc) and the Enkangala Grassland Trust on creating conservation plans and eradication of exotic vegetation in the region.

Other collaborative efforts being planned for year 3 include discussions with the Namibia Crane Working Group on potential research regarding comparisons between cranes in Namibia and in South Africa, a genetic study on Blue Cranes with the Avian Demography Unit (ADU) and a study conducted by the NRF and National Zoo into determining the genetics of Grey Crowned Cranes in particular for improved studbooks for captive birds.

**Community & Environmental Education.** This work consists of two parts – 1) that undertaken by the field-workers in their day-to-day contact with farmers, land-owners and farm labourers. This has gone to plan with a large number of farm visits, allied with a SACWG stall at farmer events, the most important being the National farmers gathering (Nampo), attracting 70,000+ visitors, the largest agricultural show in the southern hemisphere. 2) The second aspect concerns community environmental education and was undertaken by the Conservation Leadership Group within EWT.

The six EAO's facilitated 279 teachers at 164 schools to achieve the environmental education requirements of the National Curriculum Statement. During these facilitation processes the EAOs interacted with 4999 learners. Two teacher workshops were run during the year with 54 teachers attending. Due to a national teacher strike during June/July of 2007, the Department of Education put a restraint on teacher workshops for the later part of the year in order for teachers to make up lost teaching time. Thus the CLG was not permitted to run more teacher workshops during 2007.

218 meetings were held with community members, leaders, organisations, NGOs, and conservation organisations. The reasons for these meetings were varied but all pertained to conservation and/or environmental issues within the communities. (Records of the reasons for each meeting are on record.) An estimated 7769 community members were addressed at the meetings.

Resource material provided at meetings was predominately from previous years activities and/or updated material received via (WESSA). "Sharenet" material was adapted by three EAOs for the specific local conditions. These included materials relating to water pollution for the Jozini area, wetland management for the KZN Midlands area and water pollution for the Memel area.

Three Environmental Education Officers completed the NQF Level 5 – Environmental Education Training and Development Practices. This course consisted of four week long courses and intermediate facilitation sessions, assignments and presentations. All Environmental Education Officers underwent in-house training at a workshop held in November for a five day period. During this workshop the following items were addressed:

### Publications and Publicity.

Publicity is listed in Table 1. Note too that two oral presentations have been accepted by the conference organisers of the PAOC – abstracts are attached.

**Table 1 Publications**

Type *	Detail	Publishers	Available from
(eg journals, manual, CDs)	(title, author, year)	(name, city)	(eg contact address, website)
Regional Newspapers	Kraanvoël monitoring, Christelle Pauw, April 2007	Carolina Gazette	Debbie Thiant (crane@ewt.org.za)
Lufthansa Magazine	Lufthansa protects its heraldic bird Author unknown, 200 <sup>th</sup> issue	Balance	Debbie Thiant (crane@ewt.org.za)
Green Trust National Magazine	Karoo Blue Cane Project Flying High	Green Newsletter – Green Trust	Debbie Thiant (crane@ewt.org.za)
National Newspapers	National bird flies high as awareness rises, Heather Dugmore, June 2007	Sunday Independent	Debbie Thiant (crane@ewt.org.za)
Regional Newspapers	Birds of a feather, Patsy Beangstrom, July 2007	Diamond Fields Advertiser	Debbie Thiant (crane@ewt.org.za)
Regional Newspapers	Help find ringed cranes, Craig Bishop, July 2007	The Witness	Debbie Thiant (crane@ewt.org.za)
National Newspapers	Go outdoors and do some crane spotting, author	Sunday Tribune	Debbie Thiant (crane@ewt.org.za)



	unknown, July 2007		
National Newspapers	Ring in the Cranes, author unknown	Saturday Star	Debbie Thiar (crane@ewt.org.za)
All media	Finding a needle in a haystack, Leon Theron	Press release	Debbie Thiar (crane@ewt.org.za)
National Television	Agricol Crane Spotting Promotion, 50/50, television	SABC 2	Debbie Thiar (crane@ewt.org.za)
Bird Journal	Conservation Priorities for the Blue Crane in SA - the effects of habitat change and numbers McCann, K., Theron L. & Morrison, K. 2007	Ostrich78 (2) 205-212	Debbie Thiar (crane@ewt.org.za)
SA Animal Magazine	Spot the Crane Author unknown	Animal Talk – November 2007	Debbie Thiar (crane@ewt.org.za)
All Media	World Wetlands Day, 2 February, 2008 – Cranes as ambassadors for wetlands, January 2008, Tanya Smith	Press release	Debbie Thiar (crane@ewt.org.za)
Regional Media	Bloukraanvoëls in die Karoo word weer in 2008 gering, February 2008, Bradley Gibbons	Press release	Debbie Thiar (crane@ewt.org.za)
Regional Newspaper	Floss helps save cranes, March 2008, Patsy Beangstrom	Diamond Fields Advertiser	Debbie Thiar (crane@ewt.org.za)
Internet Blog	GPS to give Blue Crane a lift, March 2008, Anton Ferreira	African Birding	Debbie Thiar (crane@ewt.org.za)
National Newspaper	Cranes to be tracked, March 2008, Unknown Citizen reporter	The Citizen	Debbie Thiar (crane@ewt.org.za)
National Newspaper	GPS to give Blue Crane a lift, March	The Times	Debbie Thiar (crane@ewt.org.za)

	2008, Anton Ferreira		
Crane Newsletter	<i>Grus</i> , Monthly, Multi-authored	SACWG, EWT	Debbie Thiar (crane@ewt.org.za)
Crane Link	Annual publication – multi authored	SACWG and participants and partners	Debbie Thiar (crane@ewt.org.za)

### 3.3 Standard Measures

Code No.	Description	Year 1 Total (from previous annual rpt)	Year 2 Total	Year 1 & Year 2 Total	TOTAL Planned in application
2	MSc training by research	2	1 completed 1 underway	2	0
3	10 South African Environmental Awareness Officers trained (3 from DI funds)	0 (lack of lottery funding – see above)	3	3	3 (10)
3	800 Teachers & 300 Community Leaders (South Africans) trained in Environmental Education skills ( <b>200 &amp; 100</b> respectively from DI funds)	153 and 31	279 & 218	432 & 249	600 & 300
4A	3 (South African)	1	0	1	3
4B	8	6	6	12	8
4C	2 (South African)	3 (2 SA)	4 (2 SA)	4 (2 SA)	2
4D	16	12	10	22	16
6A	1 South African db & GIS technician trained	1	1		1
6B	3 wks intensive plus regular e-mail contact	3	8 (3 SA)	11 (6 SA)	3
6A	2 South African Fieldworkers trained (incorrectly entered)	Incorrect in 07 rpt. Correct # = 10	12	16 (variable between yrs as staff & attendees change)	2 (incorrectly entered)
6B	3 wks intensive plus regular e-mail contact	3	6	9	3
6A	25-30 Fieldworkers & Managers from SA trained in basic spreadsheet,	Variable, ranging from 8 core – 30. None from	Variable, ranging from 8 core – 30. None from	Variable, ranging from 8 core – 30. None from	Variable, ranging from 8 core – 30. None from

	database, statistics & GIS + 3-5 African range state crane workers	range states	range states	range states	range states
6B	3 training weeks	2	6	8	2
7	5	4	3	7	4
8	6 weeks	10	12	22	10
12A	5 (Relational crane db; Ringing db; Habitat db; Spatial crane wetland db, GIS data layers)	5db + 10+ spatial data sets	5db + 10+ spatial data sets	5db + 10+ spatial data sets	5db + 10+ spatial data sets
14A	3 1-week long workshops	2	3	5	9
15A	3	8			3
15B	30	6			4
16A	3 (Grus (electronic, 11 per yr), Crane Link, 1 per yr, Indwa 1 per yr) - all will report on DI activity	3 (x 11; + 1; + 1) = 13	13	26	3
16B	300	300	300+	300+	300
16C	50 (international)	50	50+	50+	50
17A	3 1-week workshops	3 (incorrectly entered)	NA	NA	NA
17B	Annual SACWG conference	1	1	2	3
18A	2	1	1	2	1
19A	2	1	0	1	1
19C	2	2	5	7	2
20	£75,000 (over 3 yrs)	£25,000	£35,000	£60,000	£75,000
22	30	20	20	20	20
23	£240,000 (over 3 yrs)	£114,155	£163,311		£498,886

### 3.4 Progress towards the project purpose and outcomes

The primary purpose of this project has been to build capacity within South Africa to ensure the long-term viability of cranes and their associated habitats. At the end of January 2008 I reviewed with our SACWG colleagues 1) what we had achieved; 2) what we were currently engaged in; and 3) how we proposed to meet our objectives and ensure a successful exit strategy, leaving behind a lasting legacy. I already knew what we had achieved and were achieving: what surprised me was the enthusiasm with which our progress was greeted by SACWG, and what felt like their “new understanding” of what evidence based conservation could achieve. In part this probably reflected the workshop coming so soon after a fairly difficult time for SACWG internally that had negatively impacted on morale and outputs. However, on all measures excepting the database we were ahead of the game. The two MSc students had respectively contributed significantly to advances in our understanding of the needs of the South African cranes. Katerina Wojtaszekova’s work on the breeding requirements of Wattled

Cranes led to SACWG staff realising that there were opportunities for positively influencing conservation outcomes, firstly by quantifying needs, and secondly, publicising these needs and finding organisations able to meet them (in this case, Working for Wetlands, Ezemvelo KZN Wildlife, and Mondi). Cécile Leclere Begueria's first attempts at the PVAs helped the staff to finally understand why I was so insistent on certain data being collected in standardised ways (despite repeatedly explaining the whys and wherefores on my part – very eloquently I thought!). Second, they were able to see graphically both the sensitivity of the current blue crane population to just slight perturbations to the system, and hence realise that all their work both in terms of research and environmental education was absolutely crucial to the long-term health of both the cranes and the ecosystems on which they depend.

As mentioned above and previously, where we have been less successful is in the design and population of a fully functional, geospatial relational database. I am still convinced (despite some disagreement with my UK colleague Dr Raj Amin, himself a database expert) that we made the right decision insisting that the database was designed, written and implemented in-house (ie within SACWG/EWT). Indeed, one of our problems was that SACWG had commissioned an external consultant to design a database for the crane data some five years before this Darwin project began – it was poorly populated with data, no metafiles were kept (and hence the feeling that those data entered were simply random observations), but above all, even those who had commissioned the work were unable to retrieve data in any useful way. In other words, we could have had an all-singing/all-dancing database that fulfilled short-term needs. This would have freed up the time of Kirsten Oliver to concentrate on those areas where her skills lay (ie GIS) – but I do not believe any *lasting* legacy would occur. Having persevered, we will be leaving a database holding data going back close on to twenty years, and more importantly, these data will continue to be available to future researchers who will not face the debacle we faced regarding valuable data. Further, SACWG is a flagship within EWT now both in terms of leading the way regarding data management, as well as being an example of how evidence based conservation decisions can positively impact on outcomes.

In this context, one area that still requires attention is that of communicating with partner organisations, especially those in government. Nothing here is too serious – simply that it is easy to get caught up with one's own deadlines and needs, and not make the time to pass on information and/or advice to relevant organisations. This has been flagged up above with respect to communication both within Working for Wetlands and between SACWG and WfW – it is also true regarding stewardship schemes that are being rolled out across South Africa. However, we have put into place various checks that ensure relevant information is not being "lost" (remaining uncommunicated).

In summary, I believe we have made considerable progress in meeting our project purpose and outcomes at this half-way stage.

### **3.5 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits**

As mentioned above, progress towards our final goal (assuming it is reflected in our overall purpose) is going well, although it is in Year 3, where our reports regarding specific wetlands and other sites, alongside more general conservation recommendations, will be made available to conservation practitioners.

## **4. Monitoring, evaluation and lessons**

Generally, at the end of each day at a workshop we explicitly ask delegates for their feedback. We have a good relationship with the learners, and so feedback is direct and honest (although generally positive!). We also again ask for appraisal at the end of each workshop, as well as asking Kerryn Morrison and Helen Prinsloo for their impressions and what comments have been fed back to them. Where people from outside of SACWG have been involved, I have generally received unsolicited feedback via e-mail, always glowing.

However, as mentioned above, despite checking on their understanding of concepts, approaches and specific tools during the workshop itself, it is apparent that familiarity with techniques quickly falls away unless staff are provided with the opportunity to go away and use these techniques on their own. Raj and I have therefore started insisting that the SACWG staff go away with specific pieces of work that need to be undertaken, but which make use of the techniques they have learnt in current/recent workshops. It is in this context that the slow development of the relational database has also been a hindrance, as it has prevented providing the staff with specific datasets to analyse and which they can actually take ownership of. I hope this last situation will not occur further, and we will endeavour to ensure there are always exercises the staff have to go away with and complete in their own time.

On the positive side, all staff regularly engage in debates about the most appropriate techniques via e-mail which I initiate at intervals (most recently, on how best to assess breeding to non-breeding ratios in their area). I also send them preliminary results from e.g. MARK analyses, and these tend to stimulate considerable e-mail correspondence too where everybody is cc'd in. Finally, Kirsten, and the IT manager at EWT HQ, have started a web-based bulletin board explicitly for GIS information – this is in its infancy, but has considerable potential. Also, Kirsten firms an important node when staff have queries regarding filling in data-sheets or requesting electronic maps of their area etc.

## **5. Actions taken in response to previous reviews (if applicable)**

The referee on my Year 1 Annual report requested that I address five queries, three of which could be (and were) addressed in the 6 monthly report. These five were:

i) Student bursaries. I attach my response from last October below. Although we kept the door open until January 2008, no applicants were forthcoming. To my mind we did all that was feasible with the exception of explicitly targeting two (predominantly) black campuses (as opposed to the Universities to which they belonged) – this may have resulted in some interest, although subsequent discussions with lecturers suggests that field-based MSc's/PhD's are not seen to be of much interest or relevance in the emerging society of South Africa today. However, another of the SACWG field workers is keen to undertake an MSc – we are encouraging this.

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.

ii) Afforestation. Again a response was given in my October report. Simply to note here that our work on Wattled Crane and on Crowned Cranes will provide quantitative information that can be used by these companies to facilitate successful breeding by these cranes in their areas. However, MONDI and Bison and others do exhibit considerable responsibility towards conservation and the environment, this should not blind us to the fact that they are commercial operations and, as I write, are actively seeking to plant high-grade grassland under commercial forestry. These key highland South African grasslands thus face the dual threat of mining and afforestation. However, SACWG and EWT (alongside Ezemvelo KZN Wildlife and others) do engage with the forestry/paper companies – my attitude within this Darwin grant is that we need to provide them (the conservation bodies) with the scientific evidence they need – I believe we are doing this (see Annex 3.4).

iii) Regional contacts. As mentioned above, Kerryn Morrison, International Crane Foundation representative in Africa and EWT Manager of African Cranes, Wetlands and Communities (ACWAC), now has direct line-management responsibility for Helen Prinsloo, and hence of SACWG. Kerryn has many years of experience of working on cranes, and from our Darwin perspective, this arrangement is excellent. What it has not achieved is the opportunity to bring crane range-state workers and SACWG together – however, ACWAC is making use of protocols, datasheets etc that we have designed for SA crane work, and I am sure that joint working between regions (including SA) will increase. In fact, Kerryn and I propose putting another Darwin grant proposal together for 2009 submission, this time explicitly focussing on pan-African problems re wetlands and livelihoods.

iv) Climate change (CC) is being investigated in our PVAs. However, despite the excellence of the CC work in SA, obtaining consensus on regionally downscaled AOGMs is difficult. Further, I have e-mailed some dozen SA agronomists, CC ecologists and conservation biologists asking for predictions regarding agricultural change in SA in the face of CC: I have yet to find anything useful! But this is a serious problem – we have half the global population of blue cranes sitting in one small area of SA (the Western Cape) feeding (and breeding) on sheep pastures, but obtaining data on likely changes in agriculture are very limited. Further, how the cranes will respond to any change is unknown – will they emigrate; will density-dependence increase? – we just don't know. The PAOC presentation will simply look at a number of “what if” scenarios (see Annex 3.3) ...

v) I hope this report, if not more succinct, is at least easier to read. Acronyms have been preceded by whatever they represent when first used in the text.

## **6. Other comments on progress not covered elsewhere**

N/A

## **7. Sustainability**

Most of the publicity regarding cranes as flagship species of grasslands and wetlands, comes from the daily interaction of the fieldworkers with farmers and the workers on farms. This is probably something that SACWG should try and quantify, but varies from our Eastern Cape FW (field worker), Tanya Smith, asking rangers and guards of the forestry company PJ Bison to accompany her on a ringing trip, through to Bradley Gibbons (Nama Karoo FW) following up reports of incidents with powerlines, to SACWG (& EWT) having stalls at NAMPO – the largest farmers show in the Southern Hemisphere. Many of the FWs, being all round naturalists, also have strong links with other bodies such as the Botanical Society (the largest membership society in SA). Central office is important here too, both fielding queries (cranes with a broken leg to colour-ring sightings) and sending out press releases. Finally, other EWT working groups collect data relevant to crane conservation, whether it be poisoning of cranes or their flying into powerlines. SACWG & EWT have excellent relations with the power utility company ESKOM who will mark transmission lines with “flappers” in areas where mortality occurs.

One area of development though that is exercising all SA conservationists at the moment is the way that mining (equals open cast coal mines) are able to plough their way through pristine habitat (especially grassland) irrespective of the conservation status or value of the habitat.

**8. Dissemination**

**9. Project Expenditure**

**Table 2 Project expenditure during the reporting period (Defra Financial Year 01 April to 31 March)**

Item	Budget (please indicate which document you refer to if other than your project application)	Expenditure	Balance
Rent, rates, heating, overheads etc			
Office costs (eg postage, telephone, stationery)			
Travel and subsistence			
Printing			
Conferences, seminars, etc			
Capital items/equipment			
Others			
Salaries (specify)			
UK	22,000	22,920	-920
SA	22,304	21,253	1,051
<b>TOTAL</b>	<b>66,147</b>	<b>66,147</b>	<b>0</b>

Please see attached letter to DEFRA (Ms Spencer, 11 December 2007) attached.

**10. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes**

[I agree for ECTF and the Darwin Secretariat to publish the content of this section](#) (please leave this line in to indicate your agreement to use any material you provide here)

## Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2007/08

Project summary	Measurable Indicators	Progress and Achievements April 2007 - March 2008	Actions required/planned for next period
<p><b>Goal:</b> <i>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve</i></p> <p><i>The conservation of biological diversity,</i></p> <p><i>The sustainable use of its components, and</i></p> <p><i>The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</i></p>		<p><i>Building capacity at local level for effective data collection and curation, plus analysis, to be used in dissemination to relevant governmental depts, ranging from local to national level.</i></p> <p><i>Expansion of environmental education and collaboration with national conservation bodies, with outcomes including stewardship, alien &amp; invasive plant removal, wetland rehabilitation and poverty alleviation.</i></p>	<p><i>(do not fill not applicable)</i></p>
<p><b>Purpose</b> To consolidate and build capacity for long term viability of cranes, associated endemics and threatened habitat in South Africa through development of sensitivity maps, population habitat viability analyses (PHVA) and training in line with government and institutional responsibilities relating to the CBD</p>	<ul style="list-style-type: none"> <li>● Improved information on the population dynamics and threats to the three crane species for effective management and implementation of crane conservation strategy.</li> <li>● Take up of recommendations by relevant SANBI programmes.</li> <li>● Training courses completed in Environmental Awareness. BTEC &amp; BSc Hons projects completed</li> </ul>	<p><i>Providing relational database for all SACWG data: a platform for data collation and curation well into future;</i></p> <p><i>Enabling GIS expertise within SACWG and hence EWT: essential for effective conservation planning</i></p> <p>Providing analytic training and enhancing environmental education</p>	<p>Population of relational database</p> <p>Analysis of data</p> <p>Initial creation of PVA models</p> <p>Preliminary risk sensitivity mapping</p> <p>Satellite tracking of cranes</p> <p>Extend collaboration with SANBI &amp; DEAT</p> <p>Extend Environmental Education and assist in completion of Higher Education courses</p>



<p><b>Output 1.</b> Management recommendations from PHVA models &amp; sensitivity maps for all 3 crane species in South Africa (YEAR 3 OUTPUT)</p>	<p>Crane distribution, breeding and non-breeding sites, environmental variables and threats (e.g. powerlines) superimposed on maps by end Yr 2.</p> <p>Crane demographic parameters extracted from statistical models Yr 2</p> <p>PHVA models and sensitivity maps produced for each of the 3 crane species by the end of Yr 2</p>	<p>Spatial data essential for building up of Risk sensitivity maps</p> <p>Targeted collection of breeding parameters essential for PVAs</p> <p>Design and implementation of relational database essential platform for current data collection and analysis and curation well into future</p>
<p><b>Activity 1.</b> Demographic &amp; habitat data collected on all 3 species using standardised protocols, aerial surveys and radio-transmitters;</p> <p>Ground truthing of relevant wetland inventory sites;</p> <p>Cleaning of existing data;</p> <p>Setting up of EWT GIS Unit;</p> <p>Construction of relational spatial database;</p> <p>Sourcing and processing of GIS data layers;</p> <p>Collation of Yr 2 field data, incorporation into national db &amp; initial statistical analyses.</p>		<p>Field work completed excepting capture of sufficient birds in correct geographical area and GPS tags attached</p> <p>Ongoing – needs &gt; integration/mgmt with WfW</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Completed</p> <p>Some activities listed as completed last year (i.e. we had physically received data layers, only to subsequently find ground-truthing/format or other expected character was unsuitable – hence listed now as ongoing.</p>
<p><b>Output 2.</b> Information for inclusion in bioregional plans and statutory processes around threatened and protected species and ecosystems</p>	<p>Year 3 indicators</p>	<p>N/A</p>
<p>Activity 2.1. Year 3 activities, but work already underway</p>		<p>Data analyses of fecundity &amp; survival (CMR) underway, plus PVA structure and Risk Sensitivity Analyses started.</p>
<p><b>Output 3.</b> Forward Strategy for National Crane Conservation</p>	<p>Year 3</p>	<p>None in Year 2</p>

Activity 3.1. N/A	N/A	Planning underway
<b>Output 4.</b> Collaborative partnership with Working for Wetlands Programme	<p>Prioritisation of important crane wetlands to feed into planning processes of Working for Wetlands Programme from Yr 1</p> <p>Involvement in Working for Wetlands rehabilitation planning teams from Yr 1</p> <p>Ground truthing of relevant wetland inventory sites by end of Yr 2</p> <p>Initiation of Working for Wetlands projects at important crane sites including rehabilitation and poverty alleviation from Yr 2</p>	These are all important indicators, not just of collaboration between Working for Wetlands and SACWG, but also key in terms of South Africa meeting its CBD commitments (wetland inventory). The rehabilitation of wetlands will be important on a number of fronts, including increasing habitat suitability for crane breeding (especially the Endangered wattled crane) and poverty alleviation.
<p>Activity 4.1. Priority crane wetland assessment (Working for Wetlands) – given as activity in Year 3 in Log frame.</p> <p>Initiation of Working for Wetlands projects at important crane sites including rehabilitation and poverty alleviation</p> <p>Ground-truthing of remote sensed wetlands</p>	Activities undertaken, but as indicated above, increased priority to be given to wetland rehabilitation relevant to crane conservation.	Greater strategic management and planning of national wetland inventory for conservation purposes required on part of WfW. This has been expressed in appropriate fora and is being remedied. SACWG/DI actively feeding into process, currently primarily thro ground-truthing, but also K Oliver sitting on Committee. We are also embarked on Risk Sensitivity Analyses that will prioritise wetlands for rehabilitation
Output 5. Capacity in advocacy and lobbying techniques	7 SACWG field staff & 25 associated EWT WG staff trained by end Yr 1	This will be an EWT-wide training commitment – discussions in progress for external training to be provided for all EWT employees.
Activity 5.1. Undertake training	External consultants to be used – planned for 2007	To be undertaken by EWT
Output 6. South African capacity in data analysis including statistical methods and spatial analysis, GIS	SACWG and other interested persons trained in workshop modules	Training going to plan: overviews of population dynamics, PVAs, relational databases & GIS. Intensive courses now given in sampling design, spreadsheet usage, PVA modelling and GIS usage.

database management		
<p>Activity 6.1. Create relational database and appropriate Excel worksheets</p> <p>6.2 Seamlessly transfer data between PDAs/Excel and Access</p> <p>6.3 Training in Population Dynamics, PVAs, Relational Databases, GIS, Excel and Statistical Analyses</p>	<p>Worksheet and database design implemented &amp; tested. Training on course, with further week long sessions planned on 07/08 for using GIS and PVA software. It was brought to the attention of EWT Working Group Managers &amp; Directors that time and money needed to be provided for EWT employees to attend these training workshops – unfortunately, take-up outside of SACWG/DI staff is low.</p>	<p>Adjacent comments still appropriate in Year 2. However SACWG staff have proved excellent learners and our courses will prove a lasting legacy.</p>
<p>Output 7. African regional capacity built in GIS and spatial analysis including basic statistical analysis</p>	<p>3-5 AWAC staff trained by yr 1</p>	<p>Not carried out. Indicator appropriate – financial constraints limiting opportunities. However, now that Kerry Morrison (ACWAC Manager) is also line-manager of Helen Prinsloo (SACWG), hopefully some mutual exchange of skills between countries may be possible</p>
<p>Activity 7.1. Range state training</p>	<p>Not carried out – seeking funding to enable attendance by relevant range state biologists</p>	<p>See above</p>
<p>Output 8. Fully functional GIS unit for management of crane and associated endemics and habitat within EWT</p>	<p>GIS unit set up and operational</p>	<p>We employed Kirsten Oliver in the full knowledge that her primary skills lay in GIS and much less so in data base design and implementation. We were 7 months late in appointing to this post, and in hind sight we <i>may</i> have been better off putting the db design out to tender. However, even today and running nearly 12 months late (although we have run the GIS work in parallel and so are not as behind as appears) I am still of the opinion that we were right in persisting with training a SACWG/EWT person to design and implement databases. Kirsten will continue to contribute to SACWG and probably other EWT Working Group databases beyond the lifetime of this project.</p>
<p>Activity 8.1 Collect &amp; collate spatial data &amp; begin GIS processing</p> <p>8.2 Automated data checking and automated seamless inputting of field workers data sheets</p>		<p>I note that included in this output is effectively a statement concerning full functionality of the database, including seamless integration between fieldworker Excel sheets and automated reading into Access. They are</p>

8.3 Fully populated database with functional query facilities		both MS products and should happily talk to each other – NOPE! Kirsten has had to receive advanced training in VBN and query and general script writing to take this forward to the standard we wish. These frustrations have not been aided by “lost” and/or historic data still appearing, but generally in formats requiring extensive cleaning and appropriate reformatting (again often using code). We are getting there and this will be a major legacy of the Darwin project – just very time-consuming and frustrating.
Output 9 Three annual standardised status reports for the 3 crane species	Template produced by end Yr 1, workshops undertaken, status reports generated and being used for management decision making Yrs 1-3	Decided not to produce report template since SACWG fieldworkers were already producing monthly reports along agreed format. Will be reviewed in 2007.
Activity 9.1. Monthly reports from fieldworkers following standardised format		Completed
9.2. Synthesis into Annual Report		Completed
Output 10 Financial forward strategy for crane conservation	Strategy commissioned (Yr 2) and implemented within Yr 3	
Activity 10.1. Sharon Magro to review & update SACWG Business Plan		Sharon Magro has moved on to a new post within EWT and Debbie Thiar has taken over – it may take longer for this to be completed.
Output 11 Expanded and enhanced community environment education programme	Minimum of 800 school teachers and 300 community leaders trained and supported per year in accredited EE <ul style="list-style-type: none"> <li>• 10 Environmental Awareness Officers trained per year</li> </ul>	After considerable problems in Year 1, the EE component seems to be getting back on track following restructuring of CLG (Community Leadership Group within EWT) Note bene – the figures given in LH box were entered incorrectly on original application: the correct DI component was to be 3 Environmental Awareness Officers trained, alongside 200 teachers and 100 Community leaders in Environmental Education skills.
Activity 11.1. Training of teachers & community leaders 11.2 Training of Environmental Awareness Officers 11.3 Contact with land-holders, farmers & workers		11.1 Approximately a 150 teachers and 50 community leaders will be trained in a year 11.2 Three EAOs are undergoing yearlong learnership certificate training in Environmental Education 11.3. Large numbers of farmers and labourers reached by SACWG/DI

		field workers, averaging 10 farms and associated farmers per week.
Output 12 Publications & Publicity	None explicitly highlighted in Year 2 – but see Table 2 below.	Measurable indicators exclude the “press work” done by SACWG and ZSL, which should be included (Scientific papers are covered under submission in Year 3)
Activity 12.1.EE material produced 12.2 Public awareness material produced such as publicity to newspapers, radio & TV etc.		12.1 EE material not produced (see above) 12.2 See Table 2 above Additional outputs: Two oral presentations accepted by the Pan African Ornithological Congress – see attachments.

## Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Goal:</p> <p>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources</p>			
<p>Purpose</p> <ul style="list-style-type: none"> <li>● To consolidate and build capacity for long term viability of cranes, associated endemics and threatened habitat in South Africa through development of sensitivity maps, population habitat viability analyses (PHVA) and training in line with government and institutional responsibilities relating to the CBD</li> </ul>	<ul style="list-style-type: none"> <li>● Improved information on the population dynamics and threats to the three crane species for effective management and implementation of crane conservation strategy.</li> <li>● Take up of recommendations by relevant SANBI programmes.</li> <li>● Training courses completed in Environmental Awareness. BTEC &amp; BSc Hons projects completed</li> </ul>	<ul style="list-style-type: none"> <li>● Detailed crane sensitivity maps, PHVAs, status reports and recommendations for population and habitat management across 3 species and related populations</li> <li>● Annual review and feedback reports from SACWG participants and partners including provincial conservation authorities</li> <li>● Accredited certificates in EA course completion</li> <li>● Completion of post-graduate studies</li> </ul>	<ul style="list-style-type: none"> <li>● Long term sustainability of SACWG within the EWT and the OCG and KZN CF</li> <li>● Current support for crane conservation NGOs maintained within South Africa</li> <li>● Governmental spatial data delivered on schedule</li> <li>● South African government remains committed to the CBD and National Environmental Management: Biodiversity Act</li> <li>● Accreditation on time</li> <li>● Students complete studies on time</li> </ul>
<p>Outputs</p> <ul style="list-style-type: none"> <li>● Management recommendations from PHVA models &amp; sensitivity maps for all 3 crane species in South Africa</li> </ul>	<ul style="list-style-type: none"> <li>● Land cover &amp; wetland inventory maps consolidated by end Yr 1</li> <li>● Crane distribution, breeding and non-breeding sites, environmental variables and threats (e.g. powerlines) superimposed on maps by end Yr 2.</li> <li>● Crane demographic</li> </ul>	<ul style="list-style-type: none"> <li>● PHVA and sensitivity map reports</li> <li>● Management reports</li> </ul>	<ul style="list-style-type: none"> <li>● Delivery of national georeferenced data on schedule</li> <li>● Relevant data available for PHVA analyses</li> </ul>

	<p>parameters extracted from statistical models Yr 2</p> <ul style="list-style-type: none"> <li>● PHVA models and sensitivity maps produced for each of the 3 crane species by the end of Yr 2</li> </ul>		
<ul style="list-style-type: none"> <li>● Information for inclusion in bioregional plans and statutory processes around threatened and protected species and ecosystems</li> </ul>	<ul style="list-style-type: none"> <li>● Management recommendations stemming from PVA and sensitivity maps by end of Yr 3</li> <li>● Advocacy of conservation strategy to relevant lead agencies by end of Yr 3</li> <li>● Contribution to the design of SANBI National Grassland Biodiversity Programme by end Yr 3</li> </ul>	<ul style="list-style-type: none"> <li>● Presentation of recommendations</li> <li>● Participation in workshops and stakeholder forums</li> </ul>	<ul style="list-style-type: none"> <li>● Recommendations taken into consideration in policy and legislation.</li> <li>● Processes will have started within relevant time frame</li> </ul>
<ul style="list-style-type: none"> <li>● Forward Strategy for National Crane Conservation 2009 - 2013</li> </ul>	<ul style="list-style-type: none"> <li>● Workshop undertaken, National Plan produced by end of Yr 3</li> </ul>	<ul style="list-style-type: none"> <li>● Documentation and Presentation</li> </ul>	<ul style="list-style-type: none"> <li>● Participation and support of all relevant organisations</li> </ul>

<ul style="list-style-type: none"> <li>• Collaborative partnership with Working for Wetlands Programme</li> </ul>	<ul style="list-style-type: none"> <li>• Prioritisation of important crane wetlands to feed into planning processes of Working for Wetlands Programme from Yr 1</li> <li>• Involvement in Working for Wetlands rehabilitation planning teams from Yr 1</li> <li>• Ground truthing of relevant wetland inventory sites by end of Yr 1</li> <li>• Initiation of Working for Wetlands projects at important crane sites including rehabilitation and poverty alleviation from Yr 1</li> </ul>	<ul style="list-style-type: none"> <li>• List of key wetlands to be included in planning</li> <li>• Rehabilitation plans</li> <li>• Populated wetland inventory database</li> <li>• Monthly project progress reports</li> </ul>	<ul style="list-style-type: none"> <li>• Government funding for Working for Wetlands Programme continues</li> </ul>
<ul style="list-style-type: none"> <li>• Capacity in advocacy and lobbying techniques</li> </ul>	<ul style="list-style-type: none"> <li>• 7 SACWG field staff &amp; 25 associated EWT WG staff trained by end Yr 1</li> </ul>	<ul style="list-style-type: none"> <li>• Numbers of staff trained</li> </ul>	<ul style="list-style-type: none"> <li>• Staff retained in present or higher positions</li> </ul>
<ul style="list-style-type: none"> <li>• South African capacity in data analysis including statistical methods and spatial analysis, GIS database management</li> </ul>	<ul style="list-style-type: none"> <li>• Fully operational National crane database and manual by yr 1</li> <li>• 30 SACWG and other field staff &amp; associated EWT WG staff trained by end of Yr 1</li> </ul>	<ul style="list-style-type: none"> <li>• Crane monitoring data in database</li> <li>• Numbers of staff trained</li> <li>• Number of status reports</li> </ul>	<ul style="list-style-type: none"> <li>• Staff retained in present or higher position</li> </ul>
<ul style="list-style-type: none"> <li>• African regional capacity built in GIS and spatial analysis including basic statistical analysis</li> </ul>	<ul style="list-style-type: none"> <li>• 3-5 AWAC staff trained by yr 1</li> </ul>	<ul style="list-style-type: none"> <li>• Number of staff trained</li> </ul>	<ul style="list-style-type: none"> <li>• Continued support from International Crane Foundation – Africa Region</li> </ul>



<ul style="list-style-type: none"> <li>• Fully functional GIS unit for management of crane and associated endemics and habitat within EWT</li> </ul>	<ul style="list-style-type: none"> <li>• GIS unit set up and operational; staff appointed and fully trained by end of Yr 1</li> </ul>	<ul style="list-style-type: none"> <li>• Number and quality of sensitivity maps and status reports</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity for optimum use of unit and on-going EWT support</li> </ul>
<ul style="list-style-type: none"> <li>• Three annual standardised status reports for the 3 crane species</li> </ul>	<ul style="list-style-type: none"> <li>• Template produced by end Yr 1, workshops undertaken, status reports generated and being used for management decision making Yrs 1-3</li> </ul>	<ul style="list-style-type: none"> <li>• Number and content of reports</li> </ul>	<ul style="list-style-type: none"> <li>• Relevant information available</li> </ul>
<ul style="list-style-type: none"> <li>• Financial forward strategy for crane conservation</li> </ul>	<ul style="list-style-type: none"> <li>• Strategy commissioned (Yr 2) and implemented within Yr 3</li> </ul>	<ul style="list-style-type: none"> <li>• Report provided to SACWC</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable donors available</li> </ul>
<ul style="list-style-type: none"> <li>• Expanded and enhanced community environment education programme</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum of 800 school teachers and 300 community leaders trained and supported per year in accredited EE</li> <li>• 10 Environmental Awareness Officers trained per year</li> <li>• Community education and land owner programme enhanced by yr 3</li> </ul>	<ul style="list-style-type: none"> <li>• Number of trained teachers &amp; leaders</li> <li>• Progress reports</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers have continued interest in EE training</li> <li>• EE accreditation on time</li> </ul>
<ul style="list-style-type: none"> <li>• Publications &amp; Publicity</li> </ul>	<ul style="list-style-type: none"> <li>• 3 scientific papers submitted by end Yr 3; EE material produced and used in schools by end Yr 1, community education and land owner awareness material produced by end Yr 1</li> </ul>	<ul style="list-style-type: none"> <li>• Number of papers submitted; publicity material sent to Darwin Initiative</li> </ul>	<ul style="list-style-type: none"> <li>• EE material being taken up by target groups</li> </ul>

<p><b>Activities</b> Data Collection, Collation and Analysis</p>	<p><b>Activity Milestones</b></p> <p><u>Year 1:</u> 1) Employment of additional field workers; 2) Demographic &amp; habitat data collected on all 3 species across eastern grasslands, western Cape &amp; Karoo, using standardised protocols, aerial surveys and radio-transmitters; 3) Ground truthing of relevant wetland inventory sites; 4) Cleaning of existing data; 5) Setting up of EWT GIS Unit; 6) Construction of relational spatial database; 7) Sourcing and processing of GIS data layers; 8) Collation of Yr 1 field data, incorporation into national db &amp; initial statistical analyses.</p> <p><u>Year 2:</u> 1) Demographic &amp; habitat data collected on all 3 species across eastern grasslands, western Cape &amp; Karoo, using standardised protocols, aerial surveys and radio-transmitters; 2) Additional spatial data collated, followed by initial sensitivity analysis and modelling; 3) Analysis of CAR counts to obtain population trends; 4) Collation of Yr 2 field data, incorporation into national db &amp; detailed statistical analyses; 5) Construction of PHVA models for all 3 spp., including population sub-structure: initial runs.</p> <p><u>Year 3:</u> 1) Refinement of sensitivity maps &amp; production of final maps; 2) Final statistical analyses of demographic &amp; habitat data. Also CMR analyses of ringing &amp; sighting data to obtain robust survival estimates; 3) Update and final run of PHVA models</p>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>● Able to employ suitably qualified field workers &amp; GIS staff</li> <li>● Farmers/land-owners allow field workers to carry out necessary observations</li> <li>● National geo-referenced data delivered on schedule</li> </ul>
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Environmental Awareness	1) Day-to-day contact of farmers & workers by field staff; 2) Accredited EE in urban & rural areas; 3) Conservation Leadership Group training of teachers in EE.	Local support for Conservation Leadership Group (EWT) continues.
Training	1) Training in spreadsheet, relational database, statistics, & GIS and spatial analysis at entry, intermediate and advanced levels; 2) Training in fieldwork & filling in pro-forma data-sheets; 3) Training in interrogation of relational databases held on central hub; 4) Training in annual reporting; 5) Training in PHVAs through interactive sessions & interpretation of results; 6) Training in interpretation of risk-sensitivity maps; 7) Training in lobbying and advocacy; 8) Training of Environmental Awareness Officers; 9) Training of teachers & Community Leaders in EE	Local support for EWT Working Groups continues
Management Recommendations and Action	<u>Year 3</u> : 1) Priority crane wetland assessment (Working for Wetlands); 2) Priority crane habitat assessments (SANBI); 3) Priority area assessments from crane sensitivity maps – risk analysis (Bioregional plans, local and regional government, DEAT (Dept of Environmental Affairs & Tourism), utility providers); 4) Sensitivity outputs from PHVAs and spatial maps to inform crane conservation and management, resulting in National Plan for Crane Conservation in South Africa Five-year Forward Strategy; 5) Implementation of five-year financial strategy commissioned in Year 2; 6) Advocacy of conservation strategy to relevant lead agencies; 7) Initiation of Working for Wetlands projects at important crane sites including rehabilitation and poverty alleviation	<ul style="list-style-type: none"> <li>• Dept of Environmental Affairs &amp; Tourism remains committed to CBD &amp; continues financing National Grasslands Biodiversity Programme, National Spatial Biodiversity Assessment &amp; Working for Wetlands.</li> <li>• Bio-regional planning &amp; Stewardship continues under National Biodiversity Act</li> </ul>

Reporting	<p><u>Year 1:</u> 1) Standardised template produced for status reporting; 2) Standardised field protocols developed; 3) Status reports on each of the 3 spp; 4) Two workshops with report-backs; 5) Interim wetland characterisation report.</p> <p><u>Year 2:</u> 1) Status reports on each of the 3 spp; 2) Two workshops with report-backs; 3) Interim wetland characterisation report; 4) Financial forward strategy commissioned and received.</p> <p><u>Year 3:</u> 1) Workshop with report-backs; 2) Final project workshop with 2009 five year Forward Strategy using PHVA and sensitivity map risk assessments; 3) Final status reports of national crane situation in 2009; 4) Final listing of characteristics of priority crane wetland areas; 5) Three scientific papers submitted; 5) Community education &amp; Environmental Awareness programme progress reports</p>	Project implementation timetable is kept to.
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## **Annex 3 onwards – supplementary material (optional)**

**3.1 Letter to DEFRA requesting Change to Budget**

**3.2 Example training for Excel**

**3.3 Accepted PAOC Abstract – blue cranes**

**3.4 Accepted PAOC Abstract – wattled cranes**

**3.5 CD-RW with GIS Training – to be sent by post**