#### **Darwin Initiative**

#### Half Year Report (due 31 October each year)

PLEASE NOTE: Due to the increased number of reports expected in 2005, we <u>will not be able to</u> <u>confirm receipt of reports</u> but will contact you individually should any questions arise

Project Ref. No.	13/018			
Project Title	Building Genetic Forensic Capacity to Reduce South Africa's Illegal Trade			
Country(ies)	South Africa			
UK Organisation	University of Sheffield			
Collaborator(s)	University of KwaZulu-Natal (Prof Mike Perrin)			
Report date	30 September 2005			
Report No. (HYR 1/2/3/4)	2			
Project website	http://www.shef.ac.uk/misc/groups/molecol/parrotandcrane.html			

# 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).

April - Sept Two South African MSc students based at Sheffield University to undertake research and training in development of a genetic marker set.

May 2005 Dr Taylor travelled to the UK to visit Terry Burke and Deborah Dawson and view the molecular laboratories and facilities at the University of Sheffield.

May 2005 Dr Taylor visited UK experts working at a number of government, NGO and private organisations working in the field of wildlife DNA fingerprinting and illegal trade.

## 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.

Microsatellites developed for other species were first examined for utility in the Blue rCrane and Cape Parrot.

A valuable resource of 48 published and unpublished Grus crane species microsatellites (unpublished microsatellites kindly provided by Travis Glenn) was identified. For 6 unpublished loci primers were designed. All 48 loci were tested in Blue crane. Thirty-three loci amplified well without any further work. In 10 unrelated individuals, eight loci had 2 alleles and thirteen loci had more than 3 alleles. Of these 9 loci did not display null alleles and suitable for paternity assignment in the Blue crane. These loci will now be tested in more individuals (and some from other populations where possible) to determine if we have now identified a sufficient number of microsatellite loci for confident paternity assignment in this species. This work will be performed in South Africa (Sept 2005-Jan 2006. On return to Sheffield genotyping data will be reanalysed and paternity assignment software and techniques by demonstrated. In Sheffield during Sept 2005-Jan 2006, further microsatellite development work will continue in Sheffield to develop more loci (although we suspect few additional loci with be required). For six loci PCR amplified blue crane products will be sequenced and/or primers (re)designing and tested. Bird loci known to amplify well in other species have also been tested and amplified well. These will be tested for polymorphism.

Despite testing 60 loci from other parrot (including loci from the same genus) and 44 loci amplifying to date only one polymorphic microsatellite loci has been found for the Cape Parrot. The disappointing low

level of microsatellite variation is interesting but suggests a high number of microsatellite markers may have to be developed. In some studies it has not been possible to obtain enough variable microsatellites even when developed for the specific study species (e.g. Kakapo, Miller et al. 2005). Therefore to investigate genome variability and ensure at least one method of paternity assignement will be developed, variability in Cape parrot was investigated using minisatellite probes. Early results were reassuring and suggested sufficient genetic variation is present to facilitate the use of ministaellite probes to identify paternity in this Cape parrot. Further investigation of the use of minisatellite probes will continue in South Africa whilst in Sheffield we intend to continue and try to develop more new microsatellites specifically from the Cape parrot. It is intended that the MSc students will return to the University of Sheffield in early 2006 to identify more probes for the ministallite paternity method, to perform analyses and to design primers and test the newly developed Cape parrot microsatellites for polymorphism.

Blood samples will be transferred to the UK when the students next return to Sheffield to perform genotyping on the ABI3730. This is he most efficient approach since the Sheffield ABI3730 Genotyper has a very high capacity and in Sheffield the expertise and training is available for the analyses required.

Since a second visit is due to occur there will be increased costs in travel and subsistence to enable the students to spend a further 6 months in the UK, however, it is envisaged that this can be accommodated within the budget.

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

Discussed	with	the	DI	Secretariat:
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no/yes, in..... (month/yr)

Changes to the project schedule/workplan: no/yes, in.....(month/yr)

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

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 <u>planned</u> modifications to your project schedule/workplan or budget should <u>not</u> be discussed in this report but raised with the Darwin Secretariat directly.

Please send your **completed form by 31 October each year per email** to Stefanie Halfmann, Darwin Initiative M&E Programme, <u>stefanie.halfmann@ed.ac.uk</u>. The report should be between 1-2 pages maximum. <u>Please state your project reference number in the header of your email message.</u>