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 confirm receipt of reports</u> but will contact you individually should any questions arise

Project Ref. No.	162/12/008
Project Title	DNA banking, phylogeny and conservation of the South African flora
Country(ies)	South Africa
UK Organisation	Royal Botanic Gardens, Kew
Collaborator(s)	South African National Biodiversity Institute (SANBI)
	University of Cape Town (UCT)
	University of Johannesburg (UJ)
	University of Stellenbosch (US)
	Western Cape Nature Conservation
Report date	*31 October 2005*
Report No. (HYR 1/2/3/4)	*HYR3*
Project website	*http://www.nbi.ac.za/research/dnabank.htm*

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).

All agreed objectives set in the baseline timetable detailed in the last annual report have been met as follows:

In June 2005, Felix Forest and project leader Vincent Savolainen attended the Evolution meeting in Fairbanks (Alaska), and each gave a presentation of the project outcomes (phylogenetic diversity, evolutionary patterns and outcomes for conservation in the Cape).

In July 2005, F. Forest visited Kew and used the laboratories to continue with the *rbcL* sequencing programme. A total of 395 *rbcL* sequences have so far been produced for the project (F. Forest 309; Kew summer intern 69; SANBI intern 8; J. Manning 3; K. Balele 6). In addition 340 *rbcL* sequences from Cape genera were obtained via GenBank. The South African plant 'tree-of-life' has been produced. During a workshop organised at Kew on 27 Sept-6 October, and attended by F. Forest (SANBI) and Dr Richard Grenyer (Univ. Virginia, USA, phylogenetic diversity expert), maps of phylogenetic diversity in the Cape have been generated and will be further studied with conservation stakeholders. A final project inter-disciplinary meeting to discuss conservation issues and for implementing the exit strategy is scheduled in February 2006.

In July/August 2005, both of Kew's DNA bank managers, E. Kapinos and L. Csiba, paid a 10-day visit to SANBI's DNA bank facility. This was an opportunity to amalgamate both DNA banks and to duplicate 722 South African samples at Kew, in agreement with the project MoU (the other samples will be duplicated at Kew early next year). SANBI's DNA bank now includes 4202 samples; 1812 species were collected and had DNA extracted under this project, representing 915 South African genera and 166 families. This year, following from various collecting trips (including outside the Cape in KwaZulu-Natal), 319 samples were extracted for

DNA, and another 650 DNA extracts are precipitating in ethanol and awaiting cesium chloride gradients.

During this reporting period, at SANBI, seven postgraduate students from UCT, US and University of the Western Cape have also been trained in molecular techniques for systematics and conservation. At UJ, several MSc students have been continuing their work under the supervision of Dr M. van der Bank, and one of them, Stephen Boatwright, visited Kew to receive 2-week's training in molecular techniques and software analyses.

One press release will appear in the October 2005 issue of Kew Scientist (http://www.rbgkew.org.uk/kewscientist/).

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.

N/A

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

N/A

Discussed with the DI Secretariat:	**N/A**
Changes to the project schedule/workplan:	**no**

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

Dr Krystal Tolley is the new Head of the DNA bank at SANBI, and she has taken full responsibility towards coordinating the final project duties with Kew. Dr Tolley is also extending the taxon coverage of the DNA bank to archive genetic material from the endemic fauna.

The project is also expanding and the bank is to be used and increased for DNA barcoding studies. Kew, SANBI and other international partners have received a grant from the Wolfson and Moore Foundations to evaluate which segment of the genome would best become a universal 'plant DNA barcode', and F. Conrad from SANBI's bank will visit Kew in December to attend a meeting on this topic. Drs Savolainen (Kew) and van der Bank (UJ) have also been granted permission and funds to 'DNA barcode' the flora of the Kruger National Park, one of the world's largest wildlife protected areas. Together with our Darwin workshops that are successfully bringing together DNA scientists, ecologists and conservation planners, we believe there are now several new avenues very much worth pursuing in a requested 2-year project extension. This would be especially useful towards meeting some of the CBD 2010 targets as well as the GSCP, which were not in place at the time we applied for this project. We thank in advance the Darwin Secretariat for their consideration with regard to our request.

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.