

Darwin Initiative Annual Report

Important note:

To be completed with reference to the Reporting Guidance Notes for Project Leaders – it is expected that this report will be about 10 pages in length, excluding annexes

Submission deadline 30 April 2008

Darwin Project Information

Project Ref Number	162/14/004
Project Title	A biodiversity monitoring system for Trinidad and Tobago
Country(ies)	Republic of Trinidad and Tobago
UK Contract Holder Institution	University of Oxford
UK Partner Institution(s)	
Host country Partner Institution(s)	National Herbarium of Trinidad and Tobago, Forestry Division of Trinidad and Tobago
Darwin Grant Value	£264,500
Start/End dates of Project	July 2005 to December 2008
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1 April 2007 to 31 March 2008 Annual Report Number 3
Project Leader Name	Nick Brown
Project website	http://herbaria.plants.ox.ac.uk/bol/?Caribbean
Author(s), date	Nick Brown

1. Project Background

Trinidad and Tobago have the richest biodiversity in the southern Caribbean but some of the most rapid rates of habitat loss. Conservation and sustainable management of natural vegetation in Trinidad and Tobago are compromised by a poor information base: basic habitat assessments and baseline population data are largely non-existent. This is aggravated by the scarcity of basic plant identification skills and an under-resourced and overburdened National Herbarium. This project seeks to address these problems by carrying out a detailed vegetation survey of the islands, building capacity at the National Herbarium and providing training in plant survey and identification techniques for local students, forestry staff and guides.

2. Project Partnerships

Project partnerships:

National Herbarium: We have maintained an extremely productive and positive relationship with both the Curator of the Herbarium, Mrs Yasmin Baksh Comeau and the Darwin Research Assistant, Miss Shobha Maharaj.

The University of the West Indies (UWI) has continued to demonstrate its commitment to the project by making a further substantial investment in the Herbarium including:

In January 2008 UWI appointed a temporary herbarium Technical Assistant Grade 6. Her main assignment is to clear up the backlog of work accumulated during the refurbishment period but she is also a valuable assistant on the Darwin project providing an additional pair of hands with plant pressing, photography, sorting of specimens and plot data entry. She is actively involved in the sorting and naming of specimens, and has been trained in plant identification by William Hawthorne and Stephen Harris during their visits, as well as by UWI staff. Sifting and naming large piles of RBS specimens enables faster than normal identification skill development, compared to identification of occasional specimens during normal herbarium activity. The Herbarium now has two extra, well-trained members of staff as a direct result of this project. This represents a major capacity building outcome of the project.

A further 70 new herbarium cabinets were installed in January 2008 in record time. This completes the full compliment of 200 herbarium cabinets originally requested. Inevitably, this required further re-organisation of the herbarium collection into the new layout – a task that was completed in under three weeks. The Herbarium is now world class and UWI is justifiably proud of it. The University intends to use the Herbarium as a core of a new regional biodiversity research and training centre.

[In strict confidence] There have continued to be internal tensions at UWI between the National Herbarium and the Department of Life Sciences. These tensions, which pre-date the Darwin project but were exacerbated by conflict over project resources and collaborations, have made it very difficult for us to work effectively with the latter. We have been unable to resolve these long-standing difficulties despite lengthy negotiation and they have significantly impeded the achievement of one of our training objectives (see below).

Forestry Division: The Forestry Division of Trinidad and Tobago has continued to make a huge contribution to the success of the project by providing resources which include:

The loan of two Forestry 4W drive vehicles and donation of fuel,

Secondment of two teams of eight and fourteen Forestry Division field staff. All members of both teams now have received full training in field biodiversity surveys and have the capacity to carry out robust surveys without supervision. They and other members of Forestry Division staff have received training in using the Herbarium and in specimen identification.

Remuneration for overtime and subsistence for the Forestry Division team for both Tobago expeditions in October 2006 and February 2008

The Director Forest Resources, Inventory and Management, Mr Seepersad Ramnarine came to Oxford in September 2007 for training and research in forest modelling funded by a Darwin Initiative Fellowship (EISPD17). This fellowship visit was an extremely valuable way of enhancing Forestry Division's commitment and involvement in the project. It allowed us to train the key manager responsible for biodiversity survey and enthuse him about the aims of the project. It has also allowed us to bring a large and important permanent sample plot data set into use.

We can say with some confidence that we have achieved far more with Forestry than we had planned or anticipated. Most importantly, the relationship between the Forestry Division and the UWI / National Herbarium has undergone a major transformation. At the outset there was considerable scepticism about the likelihood of productive collaboration on this project. In the event there has been a major increase in cooperation and collaboration with Forestry Division staff now some of the major users of the herbarium and a renewed interest in Forestry for biodiversity monitoring.

Other Collaboration:

The US Forest Service (International Institute of Tropical Forestry) is restarting their Caribbean Forest Mapping Project. We are in the process of negotiating collaboration via the T&T Forestry Division. We believe that there will be useful synergies as the USFS have access to new high resolution IKONOS data whilst we have an enormous quantity of biodiversity survey data.

The Herbarium is collaborating with the newly established University of Trinidad & Tobago (UTT) is undertaking an ethnobotanical survey in Trinidad, which started in May 2007.

In May 2007, we assisted researchers from the Montgomery Botanic Gardens, Florida, USA to make a germplasm collection of native palms to establish in their Botanic Garden. In return, a complete set of our native palm voucher specimens was deposited in our herbarium, which we can now comfortably be accommodated in our expanded facilities.

3. Project progress

3.1 Progress in carrying out project activities

Progress is reported against each of the planned project outputs:

Network of sample plots enumerated

We have now completed enumeration of more than double the original number of sample plots proposed. Figure 1 shows a distribution map of these plots. We have now collected approximately 23,000 voucher specimens.

In February 2008 the herbarium/Darwin staff along with 16 Forest officers from the FRIM section of the Forestry Division and two volunteers spent 4 days in Tobago and sampled 12 plots needed to complete the survey. Once again the collaboration of the Forestry Division in this exercise was an unqualified success, not only by providing personnel, but also assisted by providing two 4W drive vehicles and remuneration in the form of subsistence and overtime for their staff.

UWI research assistant Ms Shobha Maharaj has had to take a period of one month off work in order to have an orthopaedic surgery on her wrists. This means that we fell approximately one month behind schedule with our planned field work.

Mr Seepersad Ramnerine, Acting Conservator of Forests visited Oxford for one month (Sept-Oct 2007) to work on Forestry Division permanent sample plot data. We were able to clean and organise the data so that they could be incorporated into our overall biodiversity survey. We trained Mr Ramnerine in PSP data analysis methods and we are in the process of using this long-term data set for analysis of climate change influences on forest composition and dynamics for publication. Since returning to Trinidad Mr Ramnerine has trained junior staff in his section in analysis methods and collected voucher specimens from >200 unidentified individuals in his PSPs in order to establish their identities in the National Herbarium. He has used basic forest modelling techniques to examine the consequences of exploitation and fire for forest dynamics. This work is still in progress but is likely to feed directly into management strategies for Trinidad's forests. Another important outcome from this work will be a reclassification of Trinidad's forests for management purposes on the basis of complete plant biodiversity data rather than simply their timber production potential.

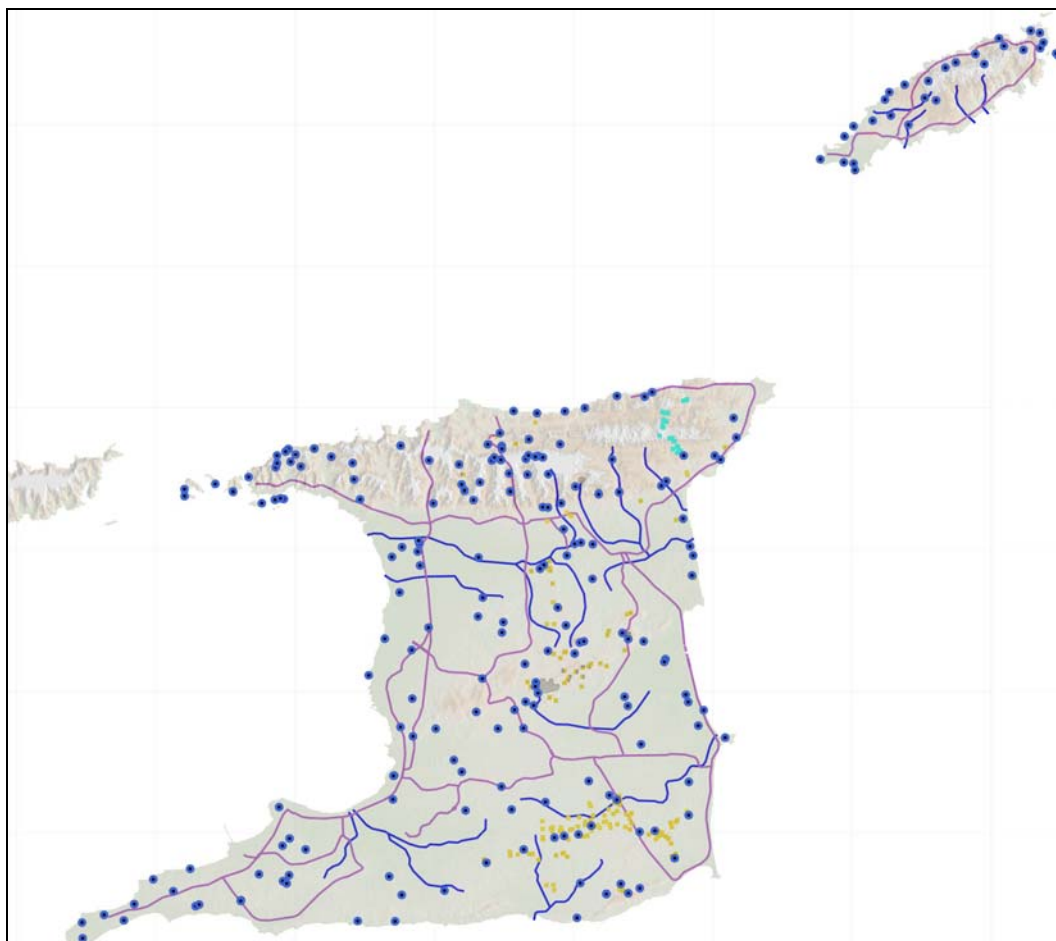


Figure 1: Distribution of RBS sample plots in Trinidad and Tobago

Expansion of National Herbarium and collections catalogued on herbarium database (BRAHMS).

To date, except for the April 2008 plot specimens which are still in various stages of drying, all 23,000 voucher specimens have been pressed, dried, mounted and catalogued. Starting in January 2008 the sorting of specimens from the plots began with a first level sort into ferns, monocots and dicots. All the samples have been sorted into families and next stage of naming and data basing species is in progress. William Hawthorne and Stephen Harris are in Trinidad in April - May to help with the sorting and naming of the huge pile of specimens. They report that they have now completed approximately 60% of identifications but a number of difficult groups remain.

All the plot data sheets have been data-based except for the last 7 plots done over the last two weeks (between 14- 22 April, 2008)

Digital photographs of the entire herbarium collection of flowering plants (10,000 high resolution images) were completed in January 2008 and uploaded to the FTP site at Oxford University. The information on the herbarium labels of these specimens has now been data based in BRAHMS as have the digital images. This work was carried out by a team of Oxford University students in order to ensure the timely completion of the complete digitization of the National Herbarium.

A great deal of effort has gone into the reorganization of the National Herbarium facilities so that it is more comfortable and accessible. This has, in turn, enhanced our productivity. Our normal services to the public have been gradually building up again and we have recorded 251 new visitors both locally and internationally.

Researchers from the Montgomery Botanic Gardens, Florida, USA have deposited a complete set of our native palm voucher specimens in our herbarium, which we can now comfortably be accommodated in our expanded facilities. The upgraded herbarium is now seen as a safe custodian of important taxonomic specimens from the region.

Taxonomy training courses provided for tertiary level students.

We have not yet been successful in implementing training for Life Science undergraduates at UWI. Internal tensions between the Department of Life Sciences and the National Herbarium have meant that our attempts to introduce a plant diversity conservation and management training course into the curriculum have been blocked. There has been conflict over the involvement of the Herbarium in teaching and over the access of the Life Sciences Department to resources and research results from the Darwin project. We have held two meetings to try and resolve these difficulties without success. Our strategy for the remainder of the project is to try to avoid any further conflict and to negotiate provision of a 'stand-alone' course that students may take as an elective if they wish to develop their taxonomic skills. We hope to be able to offer this course to a wider range of students and non-university professionals.

Whilst we have not been able to complete undergraduate training courses UWI have agreed, as a result of the extremely productive collaboration with Forestry Division to appoint a new University Lecturer in forest conservation and systematics. This new member of staff will teach on Bachelor degrees in the Life Sciences Department including Botany and Environmental & Natural Resource Management. We are delighted that this particular outcome which should ensure that our proposed undergraduate training outcomes are achieved in the very near future.

The upgrading of the herbarium facilities is already opening up new opportunities for providing training and support for biodiversity conservation in the region. In November 2007 the herbarium hosted a successful Kew international training course on Herbarium Techniques and Management. Seven (7) members of staff from the Royal Botanic Gardens, Kew, England, facilitated this course. A total of 25 participants attended coming from Trinidad, Tobago, Antigua, Guyana and Jamaica. The participants were also introduced to the Rapid Botanical Survey (RBS) method learnt from the Darwin project. Participants from Antigua have begun to apply the lessons learnt from this course at home.

In October 2007 UWI and Oxford University were the lead applicants for European Union funding under the EDULINK programme (<http://www.acp-edulink.eu/>). This programme supports cooperative projects between Higher Education Institutions (HEIs) in the African, Caribbean and Pacific Group of States. The proposal sought funding to strengthen and build of knowledge capacity in the Caribbean in plant diversity conservation and management through the following actions:

- i. Development of a Certificate in Plant Diversity Conservation and Management for forestry professionals;
- ii. Development of a module in Plant Diversity Conservation and Management to be taught in current Bachelor's programmes in Natural Resource Management, Forestry, Agriculture and Applied Biology in regional HEIs.
- iii. Development of a new Master's Degree in Plant Diversity Conservation and Management
- iv. Training Module for teachers in Plant Diversity Conservation and Management in Caribbean partner HEIs
- v. A virtual knowledge office for web-based teaching and information sharing.

The University of the West Indies (UWI) proposed to deliver the project at its campuses in Jamaica, Trinidad and Tobago, and Barbados. HE institutions in Antigua, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts/Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname signed partnership agreements to take part in this project.

Unfortunately the project was not funded but we have been encouraged to revise the application and re-submit for the next round of funding.

Taxonomy training courses provided for junior Forestry Division staff and Asa Wright guides.

More Forestry personnel have participated in survey work this year, with one team (8 persons) based in the North Eastern Conservancy and another (14 persons) from the Southern Conservancy. These participants have become fully trained in botanical survey methods and RBS sampling, and are capable of conducting sampling independent of any participation of Darwin/Herbarium staff.

Foresters from FRIM who were involved with the field survey have had approval from the Conservator of Forest and the Director of FRIM to spend one day / week at the herbarium participating in this sorting exercise so that they can begin to develop their skills in plant identification. This is a good indication of the increasing level of cooperation that has been developing between the Forestry Division and the UWI/ herbarium from collaboration on this project. The benefits of the Darwin project have begun to accrue and the recognition that both institutions can collaborate and share resources to meet some of the Millennium Goal targets for conservation of our local biodiversity is encouraging.

Four Foresters from the Eastern CIAF trained who have participated in the RBS are also being trained in plant identification – they spend one day a week in the Herbarium during which they actively participate in the identification of the specimens collected.

Updated vegetation map of T&T and an assessment of changes in habitat structure, composition and distribution since 1984.

Forestry Division has committed to participate in a detailed forest mapping project, organized by the US Forest Service (International Institute of Tropical Forestry) as part of their Caribbean Forest Mapping Project. Forestry Division have proposed that rather than there being two independent forest mapping project running simultaneously, we collaborate to produce a single output. This seems a very sensible proposal. IITF have obtained a full set of 2008 IKONOS satellite photographs for T&T which they are using to produce high resolution images of forest cover. We have very detailed biodiversity survey data. Negotiations are still in progress but we are optimistic that this collaboration will enable both projects to produce a much higher quality product and should eliminate unnecessary competition and duplication.

Field guide to the trees of T&T and Asa Wright Nature Centre published.

As reported last year we have broadened the scope of this output and aim to produce an illustrated and annotated Conservation Checklist for T&T, a more coherent vehicle for all project outputs. (Also, other UWI staff are already working on updating the Manual of Dendrology and we did not wish to duplicate this effort). We have made excellent progress with the text of this document. All species will have short notes summarising their physiognomy and ecology e.g. "small weedy tree common along roadsides"; with much more detail for species of conservation concern. We have largely resolved taxonomic problems. Local name and usage data have been incorporated. We await the completion of the species database in order to produce distribution maps. We aim to include at least 100 black and white line drawings of species with the highest conservation status. Fifty six drawings have been completed by the Oxford University botanical artist Rosemary Wise.

In addition to the Conservation Checklist we also propose to produce a large (A1) poster for schools, colleges, forestry offices, ministries etc.

- Publicising all Darwin project results
- Based around map of T&T, coloured by hotspot and showing main vegetation types.
- Surrounded by images and text boxes about species of conservation significance, and pointing in some cases to the area to which they are restricted.

3.2 Progress towards Project Outputs

Overall progress has been good but uneven. Slow progress in a number of areas has caused us to request a six month extension to the project (approved) in order to ensure that we are able to complete all of our proposed activities and achieve our outputs on time.

Progress has been much better than anticipated on enumeration of sample plots. We have experienced the following delays:

1. UWI research assistant Ms Shobha Maharaj has had to take a period of one month off work in order to have an orthopaedic surgery on her wrists. She has a chronic problem which was exacerbated by repetitive strain from intensive computer use whilst databasing collections for this project. She returned to work in December but was not able to undertake any field work for a further six weeks. This delayed field work by over a month. All field work is now complete.
2. We needed to borrow approximately 200 herbarium specimens from the British Museum in order to prepare botanical illustrations for the Conservation Checklist. The BM implemented a new bar-coding system for herbarium specimens resulting in a suspension of all loans between September 2007 and January 2008. We knew that we would not be able to make loans during this period so we arranged for Mrs Yasmin Comeau, Curator of the National Herbarium in T&T to spend two weeks at the BM in July 2007 selecting and setting aside for borrowing the specimens that we needed. Even though we did this, the BM failed to process our loan before September and then refused to consider prioritising for bar-coding the specimens we needed. The specimens finally arrived on the 9th January 2008. Our botanical artist, Mrs Rosemary Wise, is making good progress but is about two months behind schedule in the preparation of the Conservation Checklist. It is very difficult to catch up with this work as we do not have access to additional botanical artists. 56 drawings have now been completed out of approximately 100 required.

3. As a consequence of the extensive upgrade of the Trinidad and Tobago National Herbarium under the Darwin Project, it was chosen by RGB Kew as the venue for a two-week course in Herbarium Techniques for scientists from the southern Caribbean. Although we were delighted to see our project realising real benefits for the National Herbarium, the course has further added to the burden on the Curator, Mrs Yasmin Comeau, at a critical period for our project. As a consequence she was forced to ask Dr Hawthorne and Dr Harris to postpone a visit to work on specimen identification planned for November. This work was rescheduled for February 2008 but had to be postponed once again until April 2008 as both Shobha Mahraj and Yasmin Comeau were involved in the final phase of rapid botanical surveys on Tobago at this time (this was field work postponed as a consequence of Shobha's operation). This activity is now in progress.

4. Our partners, the National Herbarium of Trinidad and Tobago over-estimated their capacity to database all specimens in their collection. In July 2007 we took the pragmatic decision to take over this activity and arranged for them to take high resolution digital photographs of each herbarium sheet instead. These images have been sent by FTP to Oxford where a team of students has been examining them and then transcribing the information to the herbarium database. The rate-limiting step in this process has been the photographing of specimens in Trinidad. Although we have had to find additional sources of money to pay for the student assistance this unanticipated process has the enormous advantage of generating high quality images of the entire National Herbarium collection which we intend to put on-line. This delayed completion of the digitisation of existing accessions in the National Herbarium by three months. This activity is now complete.

3.3 Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned
4A	At least 30 undergraduates to receive training in plant survey and identification.				0	30
4B	6 weeks (2 week course, each year for 3 years)				0	6
6A	At least 6 junior Forestry Division staff and 4 Asa Wright Nature Centre guides to receive training in plant survey and identification.				26	10
6B	6 weeks (2 week course, each year for 3 years)				24	6
8	82 weeks (Brown 9 weeks, Harris 9 weeks, UK Postdoc 64 weeks).	18	17	20	55	82
10	2 field guides (Trees of Trinidad and Tobago and a user-friendly guide to Plants of Asa Wright Nature Centre)				0	2

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned
11B	Research paper "Susceptibility of vascular epiphytes to edge effects in Trinidadian rainforest" submitted Dec 07			1	1	
12A	3 databases: Vegetation types in T&T BRAHMS database of National Herbarium of Trinidad and Tobago BRAHMS database of Pre-1900 Trinidad Collections held by Oxford University.			2	2	3
12B	1 database of Forestry Division permanent sample plot data (1981-present) collated, corrected and analyzed.			1	1	1
13B	The National Herbarium will be significantly upgraded (air conditioned and new storage cabinets), expanded (>10K new accessions) and internationally networked.			1	1	1
15A	2 Press releases: one to mark the signing of the project MoU, the second to announce rates of habitat loss since 1984.				0	0
15C	One press release by Oxford University to announce project funding and project objectives.	1			1	1
20	£13, 636. (4WD vehicle (used), plant collecting equipment, survey equipment, Garmin GPS72, SLR digital camera, desktop computer and printer, Software)	£23,888			£23,888	£13,636
22	At least 75 new Modified Whittaker Plots established, enumerated, marked and georeferenced.	13	65	92	170	75

3.4 Progress towards the project purpose and outcomes

The purpose of this project was to build and maintain capacity in Trinidad and Tobago to monitor habitats, detect changes in plant populations and measure the effects of management. We believe that we have made very substantial progress towards achieving this:

- i. T&T now has a world-class herbarium with three well-trained staff members. We have a comprehensive inventory of plant biodiversity. We have detailed distribution data and an

analysis of the conservation status of every plant species. This information will shortly be publically available (on-line). An illustrated plant conservation checklist will shortly be available. These will be invaluable legacies of this project.

- ii. There is a greatly enhanced capacity and interest in biodiversity monitoring within the Forestry Division and a close working relationship with the National Herbarium has developed. Our detailed plant inventory work provided the opportunity for the necessary training for a large number of forestry staff. We believe that there has been a sea-change in interest and understanding of the value of plant biodiversity at all levels in the Division. The senior management has recognised that there is an important future role for the Division in managing and regulating biodiversity conservation and they have used the Darwin project to great advantage to acquire the skills for this future function.
- iii. The detailed baseline data that we have collected will enable informed decisions to be made about conservation priorities and protected area planning. Feedback from our project partners encouraged us to produce a conservation checklist to facilitate planning and EIA.

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

This project has seen a sea-change in the attitude and interest with the Forestry Division in plant biodiversity. We feel that this will have a major impact on biodiversity conservation and sustainable use but that this may not be directly measurable within the lifetime of this project.

4. Monitoring, evaluation and lessons

Monitoring has consisted of ensuring that the project meets financial and work targets. Final and half year reports continue to be distributed in draft form to all project partners and to the T&T Biodiversity Advisory Council. The principal project co-ordinator in Trinidad, Mrs Yasmin Basksh Comeau has contributed large sections to all reports, including this one.

We continue to hold regular project meetings with all partner organisations and ensure that the national biodiversity contact is kept well briefed on progress. The latest project update meeting was held at UWI on 28th April and was attended by 48 people including senior staff from UWI, the Director and Assistant Director of Forestry and senior staff from EMU.

A copy of a presentation on project progress given by Shobha Maharaj at this latest update briefing is attached.

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

We have addressed the issue of the role that plant inventories have played in the long-term monitoring in a number of sections above. Explicitly, the Darwin project has trained a large number of Forestry Division staff in field survey methods. This will provide a robust means of collecting future survey data that is fit for biodiversity monitoring purposes plus the personnel that are capable of carrying out. We have also provided a huge plant reference collection against which future collections can be compared. We have provided detailed distribution data for all plant species and an assessment of conservation status. These are important baseline data against which future changes can be monitored.

Regrettably, Ms Shobha Maharaj was unable to take up her position as a graduate student at Oxford University. She was offered a place but did not win OU scholarship funding (for which competition is very intense). Both UWI and OU continue to search for suitable funding sources. It is important that Shobha studies for a doctoral degree in order that she will be qualified to take up a management and/or research position in the National Herbarium in future and to guarantee the long-term sustainability of high-level taxonomic capability in T&T.

We have submitted a manuscript for publication on the survey of vascular epiphytes carried out last year:

Edward T. A. Mitchard, Yasmin S. Baksh-Comeau, Shobha Maharaj, Lucy Goodman, Theresa Meacham, Veronica Meacham, Julian J. Cottee, Steven Heathcote, Nick D. Brown, (in review) Susceptibility of vascular epiphytes to edge effects in Trinidadian rainforest.

The survey work identified over 85 species of vascular epiphyte and substantially increased the knowledge of their distribution in Trinidad. Specimens have been deposited in the National Herbarium. Our survey demonstrated an increase in species richness with distance from forest edges.

6. Sustainability

There can be no doubt about the substantial investment that UWI is making in human and physical resources for biodiversity research. Whilst this may be partly attributable to a growing national and international awareness of its importance it is not unreasonable to that the Darwin project has magnified that interest. We are confident that the expertise that has been built during this project and the world-class facilities that have been constructed will ensure long-term sustainability. We can already see that the National Herbarium is being entrained into international botanical networks and research collaborations. It is rapidly becoming a region hub for taxonomic expertise and we believe that this growth is now self-sustaining.

The greatest success in this project has been the transformation of the Forestry Division from an organisation with no plant biodiversity interest or expertise into one with over 30 trained staff and a senior management with an enormous enthusiasm for plant biodiversity conservation and management. We anticipate that long-term monitoring of plant biodiversity will be a standard activity for Forestry Division henceforth. They are justifiably proud of the skills that they have developed and are keen to assume new roles in protected area management and conservation regulation within Trinidad and Tobago.

7. Dissemination

A project update meeting was held at UWI on 28th April 2008 to which representatives of all project partners and from relevant Government organisations were invited. 48 people attended the meeting at which Ms Shobha Maharaj and Dr William Hawthorne gave briefings on progress and expected outputs and received feedback from participants.

8. 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)			
TOTAL			

Highlight any agreed changes to the budget and explain any variation in expenditure where this is +/- 10% of the budget.

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

Project summary	Measurable Indicators	Progress and Achievements April 2006 - March 2007	Actions required/planned for next period
<p>Goal: <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>(report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity eg steps towards sustainable use or equitable sharing of costs or benefits)</i></p>	<p><i>(do not fill not applicable)</i></p>
<p>Purpose To build and maintain capacity in Trinidad and Tobago to monitor habitats, detect changes in plant populations and measure the effects of management. insert original project purpose statement)</p>	<p>Baseline information on the flora, its distribution and recent patterns of change made publicly available.</p> <p>Expanded National Herbarium and enhanced taxonomic skills base.</p> <p>New information used by policy makers, educators, managers and ENGOs</p>	<p>Field surveys complete. Identification of vouchers 60% complete. Conservation Checklist in production.</p> <p>National Herbarium now world-class with three well-trained staff members.</p> <p>There is a greatly enhanced capacity and interest in biodiversity monitoring with the Forestry Division.</p>	<p>Databases will go 'live' on-line by Dec 08.</p> <p>New Herbarium to be officially 'opened' in Dec 08.</p> <p>Conservation Checklist completed for publication.</p>
<p>Output 1 Network of permanent sample plots enumerated</p>	<p>Ten 0.25 ha sample plots enumerated per habitat type.</p>	<p>This output is complete. We have enumerated >200 plots and collected >23,000 specimens.</p>	
<p>Activity 1.1 Sampling methodology agreed and tested (Aug 05). At least thirty 0.25ha sample plots enumerated per year. All voucher specimens</p>		<p>Completed</p>	

pressed, dried, mounted and catalogued (March 08).		
<p>Output 2. Updated vegetation map of T&T.</p> <p>Assessment of changes in habitat structure, composition and distribution since 1984. (insert original output)</p>	Map and habitat descriptions published. Analysis of changes published in peer reviewed journal.	In progress.
<p>Activity 2.1. Recent remotely sensed images of T&T obtained (Sept 05). Cloud-free mosaic produced (Nov 05). Unsupervised classification and stratified random sampling design produced (Dec 05). Ordination of field survey data completed (Dec 07). Supervised classification and updated vegetation map produced (March 08).</p>		In progress: We are negotiating collaboration with the USFS and Forestry Division on remote sensing. All 23,000 voucher specimens catalogued in georeferenced database. All National Herbarium specimens digitised and georeferenced.
<p>Output 3. Taxonomy training courses provided for tertiary level students.</p>	At least 30 students from UWI and ECIAF take new course in taxonomy and participate in field surveys by Yr3	Partially complete. 4 ECIAF students have taken training course and participated in field surveys.
<p>Activity 3.1 New course materials and timetable prepared (Jan 06). First cohort of ECIAF and UWI students enrolled (March 06). Course taught and students participate in National Vegetation Survey (May 06,07 and 08).</p>		Course designed but not implemented by UWI. New UWI lecturer in forest conservation and systematics to be appointed to teach new course.
<p>Output 4 Taxonomy training courses provided for junior Forestry Division staff and Asa Wright guides.</p>	At least 6 Forestry Division staff members and 4 Asa Wright guides take new course and participate in field surveys by Yr3	Complete. >30 foresters have been trained in field survey.
Activity 4.1		

<p>Output 5. Expansion of National Herbarium and collections catalogued on herbarium database (BRAHMS).</p>	<p>10,000 new accessions to National Herbarium and 90% of old and new accessions recorded on herbarium database by Yr3</p>	<p>In progress.</p>
<p>Activity 5.1. BRAHMS database installed and working (Sept 05). Existing accessions added to database (June 07). Pre-1900 Oxford accession added to database (June 07). National Vegetation Survey voucher specimens added to database</p>		<p>BRAHMS database installed and working. Existing accessions databased and photographed. Pre-1900 Oxford Herbarium Caribbean collection digitised and photographed.</p>
<p>Output 6. Field guide to the trees of T&T and Asa Wright Nature Centre published</p>	<p>Field guides peer reviewed and publication dates established.</p>	<p>In progress</p>
<p>Activity 6.1. Draft field guide to trees of T&T produced (March 08). Analysis of habitat change completed and manuscript prepared for publication (June 08).</p>		<p>Conservation Checklist in production. Conservation poster in production. One research paper submitted for publication (“Susceptibility of vascular epiphytes to edge effects in Trinidadian rainforest”).</p>

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</p> <p>the conservation of biological diversity,</p> <p>the sustainable use of its components, and</p> <p>the fair and equitable sharing of benefits arising out of the utilisation of genetic resources</p>			
Purpose			
To build and maintain capacity in Trinidad and Tobago to monitor habitats, detect changes in plant populations and measure the effects of management.	<p>Baseline information on the flora, its distribution and recent patterns of change made publicly available.</p> <p>Expanded National Herbarium and enhanced taxonomic skills base.</p> <p>New information used by policy makers, educators, managers and ENGOs</p>	<p>Project data and reports available via National Herbarium website.</p> <p>Increase in the number of personnel within the Forestry Division, and ENGOs with taxonomic skills</p> <p>EMA, Forestry Division and ENGO reports and publications</p>	Partner organisations remain committed to project.
Outputs			
Network of permanent sample plots enumerated	Ten 0.25 ha sample plots enumerated per habitat type.	Project data and reports available via National Herbarium website.	No unforeseen disruption to field surveys. Trained staff able to participate in survey work.
<p>Updated vegetation map of T&T.</p> <p>Assessment of changes in habitat structure, composition and distribution since 1984.</p>	Map and habitat descriptions published. Analysis of changes published in peer reviewed journal.	<p>Map and descriptions available via National Herbarium website.</p> <p>Copies of published papers sent to Darwin Secretariat.</p>	Effective research collaboration with Forestry Division and Centre for Caribbean Land and Environmental Appraisal Research.
Taxonomy training courses	At least 30 students from UWI and	Course materials published on-line.	>30 students opt to take new course.

provided for tertiary level students.	ECIAF take new course in taxonomy and participate in field surveys by Yr3	Student attendance and assessment records and certification.	
Taxonomy training courses provided for junior Forestry Division staff and Asa Wright guides.	At least 6 Forestry Division staff members and 4 Asa Wright guides take new course and participate in field surveys by Yr3	Course materials published on-line. Student attendance and assessment records.	Staff available to take new course.
Expansion of National Herbarium and collections catalogued on herbarium database (BRAHMS).	10,000 new accessions to National Herbarium and 90% of old and new accessions recorded on herbarium database by Yr3	Database accessible via National Herbarium website	New herbarium storage facilities in place.
Field guide to the trees of T&T and Asa Wright Nature Centre published.	Field guides peer reviewed and publication dates established.	Copies of reviewer comments sent to Darwin Secretariat. Two copies of both guides sent when published.	N/A
Activities	Activity Milestones (Summary of Project Implementation Timetable)		
Field surveys	Sampling methodology agreed and tested (Aug 05). At least thirty 0.25ha sample plots enumerated per year. All voucher specimens pressed, dried, mounted and catalogued (March 08).		
Vegetation mapping	Recent remotely sensed images of T&T obtained (Sept 05). Cloud-free mosaic produced (Nov 05). Unsupervised classification and stratified random sampling design produced (Dec 05). Ordination of field survey data completed (Dec 07). Supervised classification and updated vegetation map produced (March 08).		
Taxonomy training	New course materials and timetable prepared (Jan 06). First cohort of ECIAF and UWI students enrolled (March 06). Course taught and students participate in National Vegetation Survey (May 06,07 and 08).		
Herbarium upgrade	BRAHMS database installed and working (Sept 05). Existing accessions added to database (June 07). Pre-1900 Oxford accession added to database (June 07). National Vegetation Survey voucher specimens added to database (March 08).		
Analysis and publications	Project website on-line (March 07). Draft user-friendly guide to Asa Wright Nature Centre produced (June 07). Draft field guide to trees of T&T produced (March 08). Analysis of habitat change completed and manuscript prepared for publication (June 08).		

Annex 3 onwards – supplementary material (optional)

Powerpoint presentation supplied on CD.

Checklist for submission

	Check
Is the report less than 5MB? If so, please email to Darwin-Projects@ectf-ed.org.uk putting the project number in the Subject line.	
Is your report more than 5MB? If so, please advise Darwin-Projects@ectf-ed.org.uk that the report will be send by post on CD, putting the project number in the Subject line.	
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	
Have you completed the Project Expenditure table?	
Do not include claim forms or communications for Defra with this report.	