



Department  
for Environment  
Food & Rural Affairs



Foreign &  
Commonwealth  
Office



Department  
for International  
Development



DPLUS016

## Darwin Plus: Overseas Territories Environment and Climate Fund Project Application Form

Submit by Monday 23 September 2013

Please read the Guidance Notes before completing this form

Information to be extracted to the database and made public is highlighted in blue

### Basic Data

<b>1. Project Title</b> (max 10 words)	<b>Caicos pine forests: mitigation for climate change and invasive species</b>
<b>2. UK OT(s) involved</b>	Turks and Caicos Islands
<b>3. Start Date:</b>	April 2014
<b>4. End Date:</b>	March 2016
<b>5. Duration of project (no longer than 24 months)</b>	24 months

Summary of Costs	2014/15	2015/16	Total
<b>6. Budget requested from Darwin</b>	£96,166	£103,527	£199,693
<b>7. Total value of Co-funding</b>	£110,932	£116,875	£227,807
<b>8. Total Project Budget (all funders)</b>	£207,098	£220,402	£427,500
<b>9. Names of Co-funders</b>	Royal Botanic Gardens, Kew; TCI Dept of Environment and Maritime Affairs		

<b>10. Lead applicant organisation (responsible for delivering outputs, reporting and managing funds)</b>	Royal Botanic Gardens, Kew
<b>11. Project Leader name</b>	Martin Hamilton
<b>12. Email address</b>	<a href="mailto:m.hamilton@rbgkew.org.uk">m.hamilton@rbgkew.org.uk</a>
<b>13. Postal address</b>	The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AE
<b>14. Contact details: Phone/Fax/Skype</b>	

<b>15. Type of organisation of Lead applicant. Place an x in the relevant box.</b>									
OT GOVT	UK GOVT	<input checked="" type="checkbox"/>	UK NGO	Local NGO	International NGO	Commercial Company	Other (e.g. Academic)		

16. Principals in project. Please identify and provide a one page CV for each of these named individuals. You may copy and paste this table if you need to provide details of more personnel or more than one main, or other, project partner.

Details	Project Leader	Project Partner 1	Project Partner 2
Surname	Hamilton	Wood	
Forename(s)	Martin	Kathleen	
Post held	UKOTs Programme Coordinator	Director	
Institution (if different to above)	Kew	Turks and Caicos Islands Government	
Department	Seed Conservation Department	Department of Environment and Maritime Affairs (DEMA)	
Telephone/Skype			
Email	<a href="#">_____</a>	<a href="#">_____</a>	

17. Has your organisation been awarded a Darwin Initiative award before (for the purposes of this question, being a partner does not count)? If so, please provide details of the most recent awards (up to 6 examples).

Reference No	Project Leader	Title
DPLUS006	Thomas Heller	Seed Conservation in the Caribbean UKOTs
20-020	Stuart Cable	Madagascar Agroforestry Livelihoods Project
20-021	Dr William Milliken	Forest Futures: livelihoods and sustainable forest management in Bolivian Amazon
17-021	Dr Kate Hardwick	Restoring Tropical Forests: a Practical Guide
16-012	Prof. Hugh Pritchard	Orchid Seed Stores for Sustainable Use (OSSSU)

18. If your answer to Q17 was No, provide details of 3 contracts previously held by your institution that demonstrate your credibility as an implementing organisation. These contracts should have been held in the last 5 years and be of a similar size to the grant requested in this application. (If your answer to Q17 was Yes, you may delete these boxes, but please leave Q18)

#### Project Details

19. **Project Outcome Statement:** Describe what the project aims to achieve and what will change as a result. (50 words max)

Management and restoration of the threatened native TCI National tree, Caicos pine, and its habitat to enhance resilience to invasive species and climate change through implementation of an emergency restoration protocol that is scientifically underpinned and developed by a multidisciplinary specialist team to prevent local extinction of this keystone species.

**20. Background:** (What is the current situation and the problem that the project will address? How will it address this problem? What key OT Government priorities and themes will it address? (200 words max)

The Caicos pine is a keystone species of pine rockland ecosystems and only occurs on four islands in the Bahamas and three islands in Turks and Caicos Islands (TCI). It is listed as Vulnerable (IUCN Red List) due to development pressure, climate change and attack by an invasive, exotic, pine-specific scale insect that has reduced the mature population by 90%. Predicted climate change and sea-level rise in these low-lying islands will reduce suitable habitat leading to stressed pine trees, more susceptible to pests and disease.

Without urgent action, this species – TCI's national tree – will disappear from the islands, degrading the ecosystem's hydrology and vegetation structure. This loss will threaten biodiversity, impact ecosystem services and undermine TCI's growing green economy.

An *ex-situ* collection has been established under the Caicos Pine Recovery Project (CPRP) to rescue the subpopulations in TCI from extirpation. Short-term funding has established basic local infrastructure and raised awareness while preliminary studies in genetics, plant chemistry and mycology have been carried out providing insight and baseline methodologies. Harnessing expertise across Kew, this project will strengthen local capacity and develop an emergency restoration protocol to guide the management and restoration needed to save the Caicos pine forests.

**21. Methodology:** Describe the methods and approach you will use to achieve your intended outcomes and impact. Provide information on how you will undertake the work (materials and methods) and how you will manage the work (roles and responsibilities, project management tools etc). Give details of any innovative techniques or methods. (500 words max)

Specialist support from Kew will be provided to generate protocols with input from Geographic Information Systems (GIS), Seed Conservation, Mycology, Restoration Ecology, Conservation Genetics, Sustainable Uses Group and the UK Overseas Territories Programme. This unique combination of expertise together with a long-standing programme of collaborative work between Kew and TCI partners, including DEMA, will be essential for delivering outputs and increasing survival chances of the species.

**Caicos pine restoration** is underpinned by sound science incorporating habitat modelling, tree health assessment and analysis of genetic, mycological and chemical samples. Habitat modelling will be undertaken using field data and incorporated into a GIS containing environmental and spatial data to generate prediction models/suitable habitat maps. DNA samples from *ex-situ* collections/*in-situ* plots will be analysed using six previously identified variable nuclear microsatellites to determine remaining genetic diversity. Volatile samples from wild trees and *ex-situ* collections will be analysed using gas chromatography-mass spectrometry (GC-MS) to identify compounds related to scale insect resistance. Genetic analysis of wild mycorrhizal fungi will be conducted to identify those present in TCI pine forests and restoration sites. A Population Viability Assessment (PVA) will provide estimates of stage-specific survivorship and fecundity in different habitats using bagged seeds (seeds x-rayed prior to use) and marked individuals. Seasonal measurements will be made of xylem water potential (Scholander-type pressure bomb) and soil/leaf tissue analysis of total (Kjeldahl) Nitrogen.

A **Restoration Strategy** for local implementation will be delivered by developing a series of bespoke protocols. A 'Data collection protocol' detailing field data standards will be established following IUCN guidelines and Kew protocols with modifications to meet local needs. Targets based on existing Millennium Seed Bank guidelines, remaining genotypes and findings of seed longevity studies will be established for the 'Seed collection protocol'. The 'Nursery production protocol' will detail *ex-situ* collections maintenance and establish targets including details for propagation and cultivation. Reintroduction areas based on water relations, total Nitrogen, historic pine forest area, simulation models of sea-level rise and PVA will be identified and used to develop the 'Restoration Protocol'. This details site selection/preparation, out-planting/aftercare of nursery grown trees and site maintenance. The 'Monitoring protocol for health of wild and re-introduced trees' will establish parameters for evaluation of tree health and scale infestation.

**Ex-situ collections** (seed/nursery) will be strengthened to support conservation and restoration based on findings of genetic and seed longevity studies using the 'Seed collection protocol'. Plants produced using the 'Nursery production protocol' will maximise survivorship and enable implementation of the 'Restoration protocol'.

**Capacity building** will be delivered to enable DEMA to manage Caicos pine forests through dedicated training sessions and fully engaging TCI partners in fieldwork. Training will be provided in field data collection and sampling techniques by Kew specialists involved. The development of protocols (see below) will be done in partnership to ensure successful implementation.

Kew will provide overall **project management** and financial controls. A dedicated, part-time project manager who has been involved since 2006 has been identified to ensure the project is able to start immediately and deliver project outputs.

## 22. How does this project:

- a) Deliver against the priority issues identified in the assessment criteria
  - b) Demonstrate technical excellence in its delivery
  - c) Demonstrate a clear pathway to impact in the OT(s)
- (500 words max)

- a) This project delivers against the themes "Habitat or species conservation", "Climate change resilience, mitigation and adaption" and "Development and use of tools and systems for environmental management" by providing a scientifically-based series of protocols for management and restoration of the pine rockland ecosystem that is being decimated by an introduced, invasive insect pest. These protocols form a tangible outcome enabling the TCI government to deliver long-term conservation of Caicos pine forests in the face of climate change – a strategic priority of DEMA. Restoring the pine forests will have positive impacts on many other native and endemic species that are found in TCI. Therefore, this project will contribute to the CBD (articles [8](#) especially, but also [12](#), [17](#) and [18](#)) and directly to [targets 4 \(effective management & restoration\)](#), [7 \(in situ conservation\)](#) and [10](#) (tackling invasive species) of the Global Strategy for Plant Conservation. [Aichi targets 5, 9, 12, 14, 15 and 19](#) will also be supported. By informing biodiversity management planning and helping to prevent the spread of an alien species, the project is aligned to [Strategic priority \(i\) and \(ii\) of the UKOT Biodiversity Strategy](#). With regards to the UKOT Environment Charters, the project will contribute to commitments of the UK and TCI to strengthen capacity to restore key habitats, ensure the protection of key species. It also promotes better co-operation and use of UK expertise.
- b) Institutional planning for this project has been underway for six months to ensure the input of key individuals from Kew and DEMA. This has contributed to technical excellence in the design of the project and proposed activities which are practical, achievable and offer value for money. Facilities and specialist equipment necessary for the successful delivery of the project are in-place at Kew and available to the project. A logframe has been developed for monitoring, evaluating and measuring project progress and impact. The key outcome of this project – a set of practical protocols, collaboratively established, for the management of the Caicos pine forests by DEMA – will help embed good environmental decision-making in TCI.
- c) Restoring the Caicos pine forests is a complex challenge which requires an in-depth knowledge of the habitat, the genetic diversity of extant trees and collections, the role of mycorrhizal fungi and plant chemistry. Kew is one of the few organisations capable of providing this breadth of expertise and has a successful track record of collaboration with TCI partners. This application has been prepared in close collaboration with DEMA, which demonstrates the commitment of the government to Caicos pine forest conservation and this project. DEMA already funds a dedicated member of staff responsible to maintain the *ex-situ* pine collections. As part of the capacity building of the project, Kew will provide specialist training and support to DEMA staff to assist them in their long-term conservation efforts and maximise the project's impact. The protocols developed by the project will enable DEMA to deliver sustained pine forest restoration in TCI beyond the life of the project.

**23. Who are the stakeholders for this project and how have they been consulted (include local or host government support/engagement where relevant)? Briefly describe what support they will provide and how the project will engage with them. (250 words max)**

The main project partner is the TCI Department of Environment and Maritime Affairs (DEMA) with whom Kew has a Memorandum of Collaboration. DEMA have been consulted through email/Skype and clear roles and responsibilities have been agreed. DEMA will provide local project management including continued liaison with local community, field support for visiting researchers, supervision of nursery officer and collection of data and samples following required training. DEMA will continue the daily management of the *ex-situ* collections in TCI through the existing nursery officer (DEMA funded). Pine Cay Homeowners Association (PCHA) has been a key partner providing free transport and local logistics on the island of Pine Cay. Local communities on North and Middle Caicos have been supportive throughout and are updated by visiting researchers and DEMA on a regular basis through community meetings, interviews with local press and school visits. Other local stakeholders involved include TCI Department of Environmental Health (DEH), TCI Tourist Board, TCI Department of Education, and TCI Fire Department. The US Forest Service has provided prescribed fire training and fire management support. With the exception of small areas on Pine Cay and Middle Caicos, all land being accessed for the project and proposed for restoration will be on Crown Land managed by the TCI Government. The areas on Pine Cay and Middle Caicos that are not Crown Land are managed by the PCHA and the Turks and Caicos National Trust, both are supportive of the project due to the negative impacts the ecosystem loss would bring.

**24. Institutional Capacity:** Describe the implementing organisation's capacity (and that of partner organisations where relevant) to deliver the project. (500 words max)

Kew's mission is 'to inspire and deliver science-based plant conservation worldwide, enhancing the quality of life'. Kew's UKOTs Science Team has well-established links with the UKOTs, having collaborated with all UKOTs on plant conservation projects, providing technical support in plant identification, genetic analysis, habitat surveying & GIS, management plans and horticultural expertise. Kew's Seed Conservation Department is the world leader in the field, managing the extensive Millennium Seed Bank (MSB) Partnership, and is well experienced in capacity building and technology transfer, with partners in over 50 countries. To date it has secured over 30,000 species in the vaults of the MSB. Kew will provide overall project coordination and financial oversight. Kew will liaise with DEMA and other in-country stakeholders as well as providing training and technical support to ensure successful implementation of the project and protocols developed. TCI seed collections will be duplicated at the MSB and living collections will be grown in Kew's nurseries.

The project leader, Martin Hamilton, of Kew's UKOTs Programme first discovered and collected the invasive scale insect with TCI partners in 2005. Over the past eight years, the UKOTs Programme has built key relationships with TCI and international partners to work together and address the devastating impacts of the invasive scale. The proposed project manager, Dr Michele Sanchez, undertook PhD studies on the genetics and biogeography of pine trees in the Bahamas Archipelago and will continue the genetic analysis and lead on the GIS activities. Dr Paul Green has developed novel volatile collection equipment and protocols to show proof-of-concept for chemical composition studies. Kew's mycological unit have collected and processed initial samples of mycorrhizal fungi to show proof-of-concept for taking mycological studies forward. Dr Bruce Pavlik is Head of Kew's Restoration Ecology unit and will oversee development of habitat models, population viability analyses and restoration protocols. As such, Kew is uniquely placed to lead the project and provide the crucial scientific underpinning necessary to properly manage and restore the Caicos pine.

DEMA has led on local pine conservation activities for the past three years. Currently, DEMA has two staff members directly involved in managing the *ex-situ* collection, nursery development and community outreach. DEMA staff members have extensive knowledge of the pine forests and strong links with the local community who support their work. Kew have provided specialist training for both of the staff members and built strong working relationships. External funding for pine conservation activities ended

in March 2013. Basic maintenance of the existing nursery collection has continued through DEMA.

Kew has successfully implemented several recent Darwin Initiative projects as detailed in 17 above. Kew regularly manages large, multidisciplinary projects around the world. Kew has a dedicated project accountant that is familiar with the Darwin Initiative procedures and will retain financial oversight of the project.

## 25. Expected Outputs

Output	Indicators of success	Status before project/baseline data	Source of information
<p><b>1) Scientific basis for Caicos pine restoration established</b></p> <p>a) Habitat modelling b) Genetics c) Chemical compounds d) Mycological associations e) Population assessment</p>	<p>a) Models identify preferred habitat in face of sea level rise; optimal environmental conditions b) <i>Ex-situ</i> collections and remaining wild trees genotyped (500 samples) c) Chemical analyses demonstrate health of different populations d) Mycorrhizal fungi associated with Caicos pine identified e) Population Viability Analysis (PVA) produced</p>	<p>a) No models exist b) <i>Ex-situ</i> collections do not represent remaining genetic variation; limited data available for wild, mature trees c) No chemical data available d) No existing mycorrhizal fungi species list for Caicos pine associations e) No existing assessment</p>	<p>a) Habitat maps b) List of genotypes c) List of chemicals found in healthy trees d) Mycorrhizal fungi species list e) Population Viability Analysis (PVA)</p>
<p><b>2. <i>Ex-situ</i> collections strengthened to support conservation and restoration</b></p> <p>Seed and nursery collections</p>	<p>Increase allelic richness in <i>ex-situ</i> collections from 3.1 to 3.6 – the known wild allelic richness</p> <p>Increase in number of seed collections held at MSB from 3 to 12</p> <p>Increase in number of trees held in the nursery from 100 to 400</p>	<p>Limited genetic diversity in <i>ex-situ</i> collections due to material held only collected in limited locations in TCI</p>	<p>UKOTs Online Herbarium database</p>
<p><b>3. Capacity building to enable DEMA to manage Caicos pine forests</b></p>	<p>a) Two key DEMA staff fully trained in restoration strategy implementation b) DEMA staff monitoring health of wild and re-introduced trees c) DEMA adoption of protocols</p>	<p>DEMA not currently using protocols to monitor tree health</p>	<p>Annual progress reports from DEMA</p>

Output	Indicators of success	Status before project/baseline data	Source of information
<b>4. Restoration Strategy for local implementation</b>  a) Data collection protocol b) Seed collection protocol c) Nursery production protocol d) Restoration Protocol e) Monitoring protocol for health of wild and re-introduced trees	a) Data standards produced b) Seed longevity study completed c) Germination and cultivation standards produced d) Out-planting and site selection standards produced e) Tree monitoring standards produced	a-e) No standards exist	a-e) Published protocols

**26. Expected Outcomes:** How will each of the outputs contribute to the overall outcome of the project? (100 words max)

A 'Restoration Strategy' will provide the basis for managing and restoring the Caicos pine forests and building resilience to climate change and invasive species in the future. Implementation of the strategy will be achieved by following a series of complementary and coherent protocols that are developed in concert with local partners to ensure they are practical and implementable. Strengthened capacity and expanded *ex-situ* collections will ensure that the robust evidence generated through the project will be used by DEMA alongside best practise to successfully deliver long term Caicos Pine conservation.

## 27. Main Activities

Output 1	<b>Scientific basis for Caicos pine restoration established</b>
1.1	Generate sampling & experimental design for data collection relating to tree health, fecundity, distribution and habitat
1.2	Collect samples for genetics, mycology, chemical analysis and Population Viability Analysis
1.3	Genetic analysis of DNA samples produces list of remaining genotypes
1.4	Chemical analysis of Caicos pine extracts produces list of chemicals found in healthy trees
1.5	Genetic analysis of root samples produces list of mycorrhizal fungi species
1.6	Collate multidisciplinary data for protocol production
1.7	Population Viability Analysis undertaken
1.8	Design and generate maps of suitable habitat for Caicos pine
Output 2	<b><i>Ex-situ</i> collections strengthened to support conservation and restoration</b>
2.1	Undertake targeted seed collecting from remaining Caicos pine populations, fully documented with herbarium vouchers

2.2	Dry, clean and bank seeds in TCI and at Kew's Millennium Seed Bank
2.3	DEMA staff germinate seed to increase number of trees held in the TCI nursery
2.4	Incorporate collections data into Kew's UKOTs Online Herbarium database
Output 3	<b>Capacity building to enable DEMA to manage Caicos pine forests</b>
3.1	Design training courses for DEMA staff to implement restoration strategy, adopt protocols, and monitor health of wild and re-introduced trees
3.2	DEMA staff attend training courses in TCI led by Kew staff
3.3	Assessment of skills gained through review of performance and reports
3.4	Endorsement by Kew specialists for each area of training following review
Output 4	<b>Restoration Strategy for local implementation</b>
4.1	Develop and field test standards for data collection and monitoring
4.2	Refine and agree standards with partners
4.3	Interpret scientific findings and agree practical applications with partners to produce protocols for 'Data collection', 'Seed collection', 'Nursery production', 'Restoration', and 'Monitoring health of wild and re-introduced trees'
4.4	Partners implement protocols with guidance from Kew
4.5	Project steering committee reviews protocol implementation and agrees restoration strategy
4.6	Restoration strategy implemented by DEMA with support from Kew

<b>28. Risks</b>			
Description of the risk	Likelihood event will happen (H/M/L)	Impact of event on the project (H/M/L)	Steps the project will take to reduce or manage the risk
Forest fire devastates remaining pine forest	L	H	DEMA to continue broadleaf and fire break clearance around remaining pine forest areas.
Hurricane impacts local infrastructure and delays project implementation	L	M	<i>Ex-situ</i> collections secured prior to storm arrival; fresh water stored in event of power loss and no pump available.
No seed available for collection	L	H	Remaining trees monitored for seed collection at correct time; seed already held at MSB made available to project.
TCI Government Treasury unable to process/release funds for local salary in a timely manner resulting in non-payment of local project manager	L	H	The Director of DEMA has access to the TCI Government financial management system which will allow direct monitoring of payment processing. Kew will give advance notice to TCI Government Treasury and DEMA of payments to be made and ask for up-to-date account numbers and any preferred reference numbers to associate with the payment to ensure it is processed in a timely manner.



**29. Sustainability:** How will the project ensure benefits are sustained after the project has come to a close? If the project requires ongoing maintenance or monitoring, who will do this? (200 words max)

Through an existing Memorandum of Collaboration, Kew and DEMA will continue to work together to secure the Caicos pine's future after project completion as both are committed to ongoing conservation of the species. Institutional sustainability will be increased in TCI through DEMA staff training by Kew specialists and the new protocols to guide pine forest management and ongoing monitoring.

As part of developing the restoration strategy, the project steering group will liaise with the TCI Tourist Board on the viability of generating supplementary income through tours of restored pine habitat and the nursery. The local green economy will be boosted by ensuring that the National tree and its habitat are not lost and the TCI slogan "beautiful by nature" is not tarnished.

Field data will be repatriated for integration into the TCI national Geographic Information System. Collections data will be integrated into Kew databases with relevant records uploaded to the open access UKOTs Online Herbarium to ensure dissemination of data. Tours, community talks, local press coverage, open access data about the project and reports to government will help encourage policy level sustainability and raise the profile of DEMA to save the National tree and encourage investment in the department.

**30. Monitoring & Evaluation:** How will the project be monitored and who will be responsible? Will there be any independent assessment of progress and impact? When will this take place, and by whom? (250 words max)

In the preparation of this application, a full project logframe was developed in consultation with DEMA. This logframe, alongside the project workplan, will be used as the main monitoring tool by the project manager for tracking project progress. The assumptions identified in the logframe will be revisited by the project steering committee (comprised of staff from DEMA, Kew, US Forest Service, TCI Department of Environmental Health and TCI Fire Department) at quarterly meetings and tested during the life of the project to ensure they still hold. This will enable the team to learn, adapt and make informed decisions to maximise the impact of the project for Caicos Pine restoration (and ensure value for money). The logframe itself will be a living document and updated during the project if necessary.

Baseline information has been gathered on current *ex-situ* conservation efforts (seeds collected, nursery saplings established, etc), genetic variation in the Bahamas archipelago, known mycological associations in the region, existing chemical compounds found in pines and restoration principles for limestone forest ecosystems. Logframe indicators are set against these baselines.

The success of this project will be measured by delivery and implementation of the protocols, expansion of the *ex-situ* collections, strengthened capacity of DEMA staff and development and adoption of the 'Restoration Strategy'. The longer term impact of this project is to halt the loss of the Caicos Pine forest and biodiversity in the Turks and Caicos Islands, although it will not be possible to demonstrate this during the life of the project.

The project completion report is after the project is over and is linked to the final payment.

**31. Financial controls:** Please demonstrate your capacity to manage the level of funds you are requesting. (Who is responsible for managing the funds? What experience do they have? What arrangements are in place for auditing expenditure?)

Kew will be responsible for managing the funds for this project. The Kew Finance Department has a team dedicated to supporting financial management of projects and to reporting to funders. Institutional and project accounts are audited each year by external accountants.

See [http://www.kew.org/ucm/groups/public/documents/document/kppcont\\_080464.pdf](http://www.kew.org/ucm/groups/public/documents/document/kppcont_080464.pdf)

**Please complete the separate Excel spreadsheet which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet.**

**NB:** Please state all costs by financial year (1 April to 31 March) and in GBP. **Budgets submitted in other currencies will not be accepted.**

### **33. Value for Money**

Please explain how you worked out your budget and how you will provide value for money through managing a cost effective and efficient project. You should also discuss any significant assumptions you have made when working out your budget.

(200 words max)

Kew costs were developed using actual salary costs of each individual involved. Overheads are calculated at 40% of normal amount sought by Kew for externally-funded projects. Majority of staff costs are coming to Kew because a number of activities (including project management) are being undertaken by Kew staff to produce the scientifically robust protocols for the 'Restoration Strategy'. A significant amount of time will be spent in TCI to provide capacity building and work with DEMA to collect data/samples, expand *ex-situ* collections and develop protocols. The long working collaboration between Kew and DEMA has enabled fieldwork costs to be calculated using much-reduced rates for local accommodation and transport through previously established local contacts. Kew staff will visit in groups to facilitate economy of scale for food purchases, transport costs (i.e. one van rented from local vendor for six people during a three week visit versus corporate car rentals across multiple trips) and housing (i.e. one house rented from local vendor for six people versus six hotel rooms).

This project delivers value for money because without it, Caicos pine will go locally extinct. Ensuring the long term survival of this keystone species will support biodiversity and TCI's tourism and green economy.

Provide a project implementation timetable that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project (Q1 starting April 2014)

Activity	No of Months	Year 1				Year 2				Year 3			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1	Scientific basis for Caicos pine restoration established												
1.1	Generate sampling & experimental design for data collection relating to tree health, fecundity, distribution and habitat	1	X										
1.2	Collect samples for genetics, mycology, chemical analysis and Population Viability Analysis	2	X		X		X						
1.3	Genetic analysis of DNA samples produces list of remaining genotypes	4		X		X	X	X					
1.4	Chemical analysis of Caicos pine extracts produces list of chemicals found in healthy trees	1		X			X						
1.5	Genetic analysis of root samples produces list of mycorrhizal fungi species	1		X			X						
1.6	Collate multidisciplinary data for protocol production	2			X				X				
1.7	Population Viability Analysis undertaken	1							X				
1.8	Design and generate maps of suitable habitat for Caicos pine	1							X				
Output 2	Ex-situ collections strengthened to support conservation and restoration												
2.1	Undertake targeted seed collecting from remaining Caicos pine populations, fully documented with herbarium vouchers	2			X				X				
2.2	Dry, clean and bank seeds in TCI and at Kew's Millennium Seed Bank	1			X				X				
2.3	DEMA staff germinate seed to increase number of trees held in the TCI nursery	2			X	X			X	X			
2.4	Incorporate collections data into Kew's UKOTs Online Herbarium database	1				X				X			
Output 3	Capacity building to enable DEMAs to manage Caicos pine forests												
3.1	Design training courses for DEMAs to implement restoration strategy, adopt protocols, and monitor health of wild and re-introduced trees	1	X						X				
3.2	DEMA staff attend training courses in TCI led by Kew staff	3	X		X		X			X			
3.3	Assessment of skills gained through review of performance and reports	1	X		X		X			X			
3.4	Endorsement by Kew specialists for each area of training following review	1	X		X		X			X			

Output 4	Restoration Strategy for local implementation												
4.1	Develop and field test standards for data collection and monitoring	1	X										
4.2	Refine and agree standards with partners	1	X										
4.3	Interpret scientific findings and agree practical applications with partners to produce protocols for 'Data collection', 'Seed collection', 'Nursery production', 'Restoration', and 'Monitoring health of wild and re-introduced trees'	3					X	X	X				
4.4	Partners implement protocols with guidance from Kew	3							X	X			
4.5	Project steering committee reviews protocol implementation and agrees restoration strategy	1								X			
4.6	Restoration strategy implemented by DEMA with support from Kew	3								X			

## CERTIFICATION

On behalf of the trustees of

Royal Botanic Gardens, Kew

I apply for a grant of £199,693 in respect of **all expenditure** to be incurred during the lifetime of this project based on the activities and dates specified in the above application.

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful. (*This form should be signed by an individual authorised by the lead institution to submit applications and sign contracts on their behalf.*)

**I enclose CVs for project principals and letters of support. Our most recent audited/independently verified accounts and annual report can be found at:**

<http://www.kew.org/about-kew/our-work/annual-report-accounts/index.htm>

<b>Name (block capitals)</b>	DAVE SIMPSON
<b>Position in the organisation</b>	KEEPER OF THE HERBARIUM (ACTING )

**Signed**

**Date:**

## Application Checklist for submission

	Check
Have you <b>read the Guidance Notes</b> ?	X
Have you <b>checked the Darwin Plus website</b> immediately prior to submission to ensure there are no late updates?	X
Have you provided <b>actual start and end dates</b> for your project?	X
Have you provided your <b>budget based on UK government financial years</b> i.e. 1 April – 31 March and in GBP?	X
Have you checked that your <b>budget is complete</b> , correctly adds up and that you have included the correct final total on the top page of the application?	X
Has your application been <b>signed by a suitably authorised individual?</b> (clear electronic or scanned signatures are acceptable in the email)	X
Have you included a <b>1 page CV for all the principals</b> ?	X
Have you included a <b>letter of support from the <u>main</u> partner(s) organisations?</b>	X
Have you included a <b>copy of the last 2 years' annual report and accounts</b> for the lead organisation? An electronic link to a website is acceptable.	X

Once you have answered the questions above, please submit the application, not later than midnight GMT at the end of Monday 23 September 2013 to [Darwin-Applications@ltsi.co.uk](mailto:Darwin-Applications@ltsi.co.uk) using the first few words of the project title **as the subject of your email**. If you are e-mailing supporting documentation separately please include in the subject line an indication of the number of e-mails you are sending (e.g. whether the e-mail is 1 of 2, 2 of 3 etc). You are not required to send a hard copy.

DATA PROTECTION ACT 1998: Applicants for grant funding must agree to any disclosure or exchange of information supplied on the application form (including the content of a declaration or undertaking) which the Department considers necessary for the administration, evaluation, monitoring and publicising of Darwin Plus. Application form data will also be held by contractors dealing with Darwin Plus monitoring and evaluation. It is the responsibility of applicants to ensure that personal data can be supplied to the Department for the uses described in this paragraph. A completed application form will be taken as an agreement by the applicant and the grant/award recipient also to the following:- putting certain details (i.e. name, contact details and location of project work) on the Darwin Initiative and Defra/FCO/DFID websites (details relating to financial awards will not be put on the websites if requested in writing by the grant/award recipient); using personal data for the Darwin Initiative postal circulation list; and sending data to Governor's Offices outside the UK, including posts outside the European Economic Area. Confidential information relating to the project or its results and any personal data may be released on request, including under the Environmental Information Regulations, the code of Practice on Access to Government Information and the Freedom of Information Act 2000.