Submit by Monday 1 December 2008

DARWIN INITIATIVE APPLICATION FOR GRANT FOR ROUND 16: STAGE 2

Please read the Guidance Notes before completing this form. Where no word limits are given, the size of the box is a guide to the amount of information required. Information to be extracted is highlighted blue.

1. Name and address of organisation (NB: Notification of results will be by post)

Name:	**Address:**
Dr Neil Stuart	Institute of Geography, School of Geosciences, University of Edinburgh, Drummond Street, Edinburgh, EH8 9XP, United Kingdom.

2. Project title (not exceeding 10 words)

Conservation of the lowland savanna ecosystem in Belize.

3. Project dates, duration and total Darwin Initiative Grant requested

Proposed start date: 1 April 2009 **Duration of project:** 36 months **End date: :** 31 March 2012

Darwin funding requested	**2009/10**	**2010/11**	**2011/2012**	**2012/13**	**Total**
	£ 166,155	£ 73,654	£ 48,142	£ nil	**£** 287,951

4. Define the purpose of the project (extracted from logframe)

To identify priority areas for conservation within the lowland savannas of Belize, by undertaking baseline taxonomic research and vegetation mapping and by enhancing the capacity of local institutions to continue providing and interpreting biological data for conservation management.

5. Principals in project. Please 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 than one overseas project partner.

Details	**Project Leader**	**Other UK personnel (working more than 50% of time on project)**	**Other UK personnel (working more than 50% of time on project)**	**Main project partner and co-ordinator in host country**
Surname	Stuart	Goodwin	Cameron	Kay
Forename (s)	Neil	Zoe	Iain	Elma
Post held	Lecturer	Research Assistant	Post-doctoral Research Assistant	Lecturer
Institution (if different to above)		Royal Botanic Garden Edinburgh		University of Belize
Department	Geography	Botany	Geography	Botany
Telephone				
Email				

6. Has your organisation received funding under the Darwin Initiative before? If so, give details.

Reference No	Project Leader	Title
EIDPR049	Neil Stuart	Strengthening local capacity for savanna conservation and management in Belize (Scoping award)
Staff contributing to this new project have been involved with several previously successful Darwin projects:- Sam Bridgewater and Zoe Goodwin (project *12012: Xate palms* and *14025: Biodiversity of secondary forests in Belize*); Dave Harris (*15011: Building capacity for forest inventory*), and Peter Furley (*11020: Building capacity for biodiversity monitoring and assessment in Nepal*) and Duncan Moss (*EIDPR049 Strengthening local capacity for savanna conservation and management in Belize (scoping award)* .		

7. IF YOU ANSWERED 'NO' TO QUESTION 6 describe briefly the aims, activities and achievements of your organisation. (Large institutions please note that this should describe your unit or department)

Aims (50 words)
Activities (50 words)
Achievements (50 words)

8. Please list the UK/collaborative (where there are partners <u>in addition</u> to the applicant organisation) and host country partners that will be involved, and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development. This section should illustrate the capacity of host country partners to be involved in the project. Please provide written evidence of partnerships.

Partner Name: **Royal Botanic Garden Edinburgh (RBGE)**	**Details (including roles and responsibilities and capacity to engage with the project):** This proposal has been jointly formulated by staff from RBGE and the Institute of Geography at the University of Edinburgh (UE). The two organisations have a close working relationship based over 20 years of complementary research, joint teaching and publications. RBGE has an extensive reference collection of savanna specimens, collected from more than ten years of running field courses in Belize for international students of plant taxonomy and biodiversity. The detailed knowledge of the savanna ecosystem in Belize gained by RBGE's tropical botanists and the experience of its herbarium curators will be used to undertake a programme of plant collecting, identification, curation and conservation evaluation. The nationwide collecting of specimens will based on a stratified sampling of the Belizean savanna ecosystem that will be guided by satellite observations of the distribution of savanna vegetation and sub-formations. This will be generated by UE. Data will be analysed to produce a variety of outputs, including the first national checklist of Belizean savanna species, a botanical field guide and updated mapping of the savanna habitats highlighting priority areas for conservation. Through a combination of joint fieldwork and training workshops held in Belize, as well as visits by staff from UB to the UK for intensive training at RBGE, these skills and knowledge will be transferred to local partners, to ensure that the local capacity exists to provide robust ecological data and further monitoring to guide national conservation management of the savanna ecosystem beyond the end of this project.

Partner Name: **University of Belize (UB)**	**Details (including roles and responsibilities and capacity to engage with the project):** Staff from UB have been involved since the first scoping meeting in April 2006 and have been central to formulating this project. As the national university and authors of Belize's national capacity self-assessment in 2005, UB staff will continuously advise us of the knowledge transfer activities required to increase local capacity in taxonomy and vegetation survey. UB will co-ordinate the in-country training activities, making their laboratories and seminar rooms available to the project. The field data collection will be undertaken jointly with staff and students from UB, including a Belizean Darwin Officer appointed by the project who will attend training in the UK and then deliver training and produce educational materials on return to Belize. UB will be the recipient of all the data collected by the project and will maintain these after the end of the project. They will be initially recipients and then providers of training. UB will assume responsibility for continuing to disseminate outputs, by incorporating project findings into their nationally important undergraduate degree courses in ecology and natural resources management. Staff at UB trained by this project are likely to be recruited as foundation staff into the country's first Environmental Research Institute that UB will create during the lifetime of this project.

Partner Name: **Belize Botanic Gardens (BBG)**	**Details (including roles and responsibilities and capacity to engage with the project):** With the most established botanical garden, education centre and the largest source of botanical reference material in Belize, BBG have assisted in designing this project proposal and will be key to delivering the awareness-raising and public education components of this proposal. BBG will also provide the project with considerable expertise concerning local plant names, habitats and uses. BBG staff will take part in the field collecting programme, extracting suitable specimens to form the basis of a new educational savanna section within the gardens that will be designed and landscaped especially for this project. A Darwin Savanna Trail will be created with appropriate signage. This trail will expand upon pre-existing educational programmes for school children. BBG will receive outputs from the research component of this project and translate these into outputs appropriate for the general public. These will include a trail guide and a set of curriculum–focused teaching materials about the savanna ecosystem. Teaching materials will be disseminated to a trial number of Belizean schools during the project and feedback obtained and directed to the Ministry of Education (MOE) so that the materials can be revised to maximise their utility and uptake. This opportunity to build a significant educational legacy based on the project's scientific findings is feasible due to the existing strong working relationships between BBG, UB and the MOE in Belize, who have are strongly support to this project (Letter of Support attached).

Partner Name: **Forest Department, Government of Belize (FD)**	**Details (including roles and responsibilities and capacity to engage with the project):** As the National Focal Point for the CBD, Belize FD is a critical partner and has been involved in the design of the project since its inception. FD has shaped the project to ensure that capacity building activities will assist Belize in meeting its 2010 target for curbing biodiversity loss. They will also implement the scientific findings in support of the national obligations for ecosystem conservation and protected area planning. FD will be responsible for producing the 4th and 5th National Reports to the CBD during this project. It intends to assimilate findings into these documents and use them to inform revision of the National Protected Areas System Plan. FD will also be a beneficiary from the project's capacity building activities particularly the collection and curation of plant specimens. The FD is presently responsible for maintaining Belize's National Herbarium, for which it has very limited resources.

Partner Name: **Programme for Belize (PfB)**	**Details (including roles and responsibilities and capacity to engage with the project):** PfB manage the largest protected lowland savanna area in Belize and the only such protected area to have a management plan. This plan is informed by botanical collections made by RBGE and mapping from satellite data generated by UE. PfB's role will be to act as a model for land managers in other parts of Belize wishing to recognise and assess the ecological and economic value of savanna lands under their care, and to plan for the sustainable management, conservation and/or protection of these areas. PfB has been involved continuously in the evolution of project ideas since the first scoping meeting for this Darwin project, which was hosted in its Belize City office in April 2006. They offer the project in-kind assistance such as access to its Rio Bravo protected area to conduct tests into remote sensing of savanna vegetation cover types, and use of office facilities. PfB staff including its Ranger Service and Foresters will be recipients of the training in GPS, vegetation survey and plant identification techniques.

9a. Have you consulted stakeholders not already mentioned above? ☒ **Yes** ☐ **No** **If yes, please give details:** Tropical Education Center; Belize Zoo; Belize Biodiversity Monitoring Service; Ya'axché Conservation Trust
9b. Do you intend to consult other stakeholders? ☒ **Yes** ☐ **No** **If yes, please give details:** Protected Areas Conservation Trust (PACT); The Nature Conservancy (Belize) Belize Audubon Society; Private land owners.
9c. Have you had any (other) contact with the government not already stated? ☒ **Yes** ☐ **No** **If yes, please give details:** Belize High Commission, London and British High Commission, Belmopan, Belize Ministry of Education, Belmopan; Belize Land Information Centre; Ministry of Natural Resources.
9d. Is any liaison proposed with the CBD/CMS/CITES focal point in the host country? ☒ **Yes** ☐ **No** **If yes, please give details:** One of the partners, the Forest Department, is the national focal point for the CBD in Belize.

PROJECT DETAILS

10. Please provide a Concept note (Max 1,000 words) (repeat from Stage 1, with changes highlighted)

The savannas of Belize occupy almost 10% of the land area, furnishing distinctive landscapes **of ecological and economic value**. They represent the most northerly example of lowland savannas in the Americas. Whereas upland savannas are better studied throughout central America, the lowland savannas are undervalued and threatened **by a combination of human pressures and by climate change**. Yet these savannas and associated wetlands are diverse ecosystems providing important habitats for plants and wildlife that presently receive little recognition or conservation.

Despite their national biodiversity importance, Belize's lowland savannas remain neglected in comparison with forests in terms of both botanical and biogeographical research and protection. A key problem hindering management is the **insufficient information** for developing a national conservation strategy for this ecosystem. There is no comprehensive checklist of savanna species and information on species distribution is incomplete, with little known about patterns or frequency of endemism or the putative value of the plant resources. Many savanna areas, particularly in the south, remain unexplored botanically and there is therefore no basis for making informed conservation decisions. Although some botanical collections from savannas have been made by our group and associates, the national herbarium is under-resourced and specimens are not properly curated, correctly named or databased and are thus of restricted value. The limited national capacity for taxonomy was identified in 2005 as a major constraint restricting Belize from meeting its target under the CBD (*vi/9: Global Strategy for Plant Conservation*). Efforts to map the biogeography of savannas nationally have so far been limited. Only an approximate extent of savannas was delimited in the Ecosystems Map of Belize of 2001. This mapping lacked habitat and species-specific detail to allow priority areas for conservation or economic use to be identified.

Within Belize, the National Capacity Self-Assessment (2005) highlighted limited plant identification and monitoring capacity and poor public awareness about ecosystem biodiversity as constraining progress towards addressing national responsibilities under the CBD. It concluded that failure to identify and conserve resources was in part due to incomplete taxonomic information and the lack of a country-wide evaluation of biodiversity resources, by ecosystem type. It recommended the strengthening of in-country capacities in taxonomy, field data collection and use of GPS/GIS technology to identify priority areas for conservation and to recognise gaps in the present National Protected Area System. This project seeks to address these issues by improving these capacities and biodiversity data and in so doing enable Belizean institutions to meet obligations to the CBD via the National Biodiversity Strategy and Action Plan.

Gap analysis in 2005 revealed that, compared to other ecosystems, savannas are under-represented in the National Protected Areas System. This needs to be urgently addressed because savannas are experiencing an increasing variety and severity of threats. Since they occur on relatively accessible level ground, there is pressure to clear savannas for settlement and for infrastructure. Despite their unsuitability, savannas are being converted for large and small scale agriculture, altering the drainage, nutrient cycling and fire regimes and resulting in habitat degradation. In addition, the FD seeks to harvest pine, palms **and other plant resources and to promote ecotourism in a sustainable manner that protects biodiversity hotspots within savanna areas**, but presently lacks the taxonomic or geographic information needed to ensure that harvesting does not target areas of high conservation value. These shortcomings make the formulation of a national conservation strategy for savannas a top priority.

In response to this urgent requirement for information about the lowland savannas, the project seeks to strengthen local capacity in taxonomy and vegetation survey. It has been jointly planned through a series of in-country meetings with project partners, starting with a scoping visit (DEFRA scoping award EIDPR049) in 2006 followed by further meetings in Belize in April 2007 and January 2008 and continuing regular communications.

Main outcomes will be the enhancement of the limited data presently available and the capacity of local organisations to undertake monitoring of savanna biodiversity. This will enable priority areas for savanna conservation to be identified nationwide. The local project partners will then develop educational resources to promote understanding of savannas and the need for its conservation.

The University of Edinburgh (UE) has over 40 years' research experience in Belize and will co-ordinate the project, undertaking the remote sensing work to produce more current and detailed mapping of the lowland savanna ecosystem. This will initially be used to target sites for botanical collecting and a habitat conservation assessment. Plant collecting will be undertaken by botanists from Royal Botanic Garden Edinburgh (RBGE), who will collate and analyse existing plant records from Belize to determine floristic and geographical gaps in coverage. In collaboration with local counterparts, they will design and conduct collecting from under-represented areas**. The plant and habitat data generated will be made readily accessible from a database both as web-based and printed resources.** Outputs will include a national checklist of species and a field guide to the commoner plants, including photographs and habitat descriptions. Curators from RBGE will deliver workshops in herbarium techniques and curation of specimens to FD and UB. UE will deliver training on GPS and GIS.

Each of the Belizean partners has specific roles: Staff from UB will participate in the botanical surveys, involving students in data collection and assimilating the data into the national Biodiversity Resource Database. The data will also be made widely accessible through the FD's National Clearing House Mechanism to support research, conservation and protected area planning. **Partners aspire for local staff trained by the project to be employed locally after the project conclusion to ensure that the capacity is retained**. FD will ensure outputs meet priority needs under the CBD. BBG will lead the translation of the scientific outputs into curriculum-focused educational materials and will develop in-house facilities and visitor information to promote greater public awareness about the savanna ecosystem. PfB will assimilate project output into its savanna management plan and will provide a best practice example for managers of other areas identified for protection.

11a. Is this a new initiative or a development of existing work (funded through any source)? Please give details:

This is a new initiative, although both the UE and the RBGE have been undertaking research in Belize since 1996 which has informed this proposal. The two institutions have undertaken a series of botanical and remote sensing surveys of the savannas of the Rio Bravo protected area. This has provided information to support the first savanna management plan in Belize, developed in 2000 by the PfB. This prior research has established a methodology which will be developed and extended to the other savanna areas in this project.

11b. Are you aware of any other individuals/organisations/Darwin Initiative projects carrying out similar work? ☐ **Yes** ☒ **No**

If yes, please give details explaining similarities and differences, and explaining how your work will be additional to this work and what attempts have been/will be made to co-operate with and learn lessons from such work for mutual benefits:

There is no other initiative to develop a comprehensive assessment of savanna biodiversity across the country. In the south of Belize, a rapid assessment of savanna biodiversity is being conducted by the Ya'axché Conservation Trust (YCT) in one small area -the Golden Stream protected area. We are in contact with YCT and we will support and help them to expand their savanna research.

12. Please indicate which of the following biodiversity conventions your project will contribute to: -
At least one must be selected. - Only indicate the conventions that your project is directly contributing to.
- No additional significance will be ascribed for projects that report contributions to more than one convention

Convention on Biological Diversity (CBD)	☒ **Yes** ☐ **No**
CITES	☐ **Yes** ☒ **No**
Convention on Migratory Species (CMS)	☐ **Yes** ☒ **No**

What problem is this project addressing and how was it identified? (150 words)

This project responds to the nationwide skills shortage in taxonomy and vegetation mapping identified in Belize's National Capacity Self-Assessment (2005). Because of; the limited capacity to undertake the necessary surveys, botanical collecting and curation within Belize and lack of perceived value, the lowland savanna ecosystem has been poorly explored botanically and there is no nationwide assessment of the nature and distribution of savanna plant species nor levels of human disturbance. Hence, there is presently no scientific basis on which to identify priority areas within what is a highly varied ecosystem for conservation, or for sustainable use. Gap Analysis conducted in 2005 identified the lowland savanna ecosystem to be under-represented in the national protected areas system plan. It recommended building up local skills in taxonomy, GPS survey and vegetation mapping in order to gather required baseline information to inform conservation planning.

What will change as a result of this project? (150 words)

The first national assessment of the plant diversity of the lowland savanna ecosystem will be undertaken as a joint venture between UK and Belizean organisations, with this information used to inform revision of national protected area planning. The number of local staff trained to conduct further surveys and assessments will be increased as a direct result of this project so that future collection and monitoring of the ecosystem can increasingly be done by Belizeans rather than by foreign nationals. Through our network of local partners designing and disseminating information in appropriate forms on the value of the savanna ecosystem to the general public, schoolchildren and university students we expect the project will contribute to improving the currently poor public perception of savanna and lead to a greater interest in the conservation of savanna areas in the longer term.

Why is the project important for the conservation of biodiversity? (150 words)

Given the immediate threats to savanna plants and wildlife from expanding agriculture, forestry and human settlement in Belize, conserving biodiversity within savannas requires national planning to direct development away from biodiversity hotspots and bring such areas under increased protection. The information generated by this project about the lowland savannas of Belize will allow areas of both high conservation value and high landscape value within this ecosystem to be identified scientifically and consistently. This information will be used by FD to recommend revision of National Protected Areas Planning so that the most vulnerable parts of this ecosystem, areas of highest biodiversity and critical habitats for wildlife can receive greater protection. Other Belizean organisations undertaking conservation, including Belize Audubon Society and the Belize Zoo will also use this information to respond positively to the 2010 target under the CBD to reduce loss and degradation of wildlife habitats falling within the savanna ecosystem.

How does this relate to one or more of the biodiversity conventions? (150 words)

This project relates primarily to the CBD, although the lowland savanna ecosystem of Belize is also an important habitat for several migratory birds. This project contributes mostly to articles 7 (*identification and monitoring*), 8 (*in-situ conservation*), 12 (*research and training*) and 13 (*public education and awareness)* of the CBD. Increasing the capacity of the local staff to undertake taxonomy and vegetation mapping will enable Belize to comply more fully with resolution vi/9 of the CBD: Global Strategy for Plant Conservation. In terms of 2010 targets under the CBD, the ecosystems focus of this project allows it to make strong contributions to goals 1 (*conservation of biodiversity of ecosystems, habitats and biomes*), 4 (*promote sustainable uses*), 5 (*reduce pressure from habitat loss, land use change and degradation*) and 8 (*maintain capacity of ecosystem to deliver goods and support livelihoods*).

13. How will the results of the project be disseminated; how will the project be advertised as a Darwin project and in what ways will the Darwin name and logo be used? (max 200 words)

The checklist will be downloadable from the project website and from the national Biodiversity Clearing House Mechanism, as well as being available in printed form. Results will be published in journal articles and presented at conferences in Belize and internationally. Scientific outputs will be translated into forms appropriate for the general public, including printed and digital versions of a *Darwin Guide to the Commoner Plants of the Belizean Savannas. C*olour posters will be widely circulated within Belize to advertise the project in public spaces. UB will translate results into curriculum-focused educational resources, such as digital presentations and image collections to support university teaching, whilst BBG will create materials that can be re-used and reproduced in printed form by primary school teachers. Our contacts with the Belizean media will ensure the project receives wide coverage through press releases, radio and TV coverage. The Darwin Identity will be established by the naming of the *Darwin Savanna Trail* at the BBG; the branding of the *Darwin Guidebook* and by the *Darwin Project Officer* who will advertise the project and conduct outreach activities. The Darwin logo will be prominent on all trail signs, posters, newsletters, guidebooks, checklists and on a dedicated project website.

14. What will be the long term benefits of the project in the host country or region and have you identified any potential problems to achieving these benefits? (max 200 words)

Project findings will be used to propose revision of national protected areas to enable more sustainable use of the lowland savanna ecosystem. Revision would be based for the first time on a national assessment of plant biodiversity and distribution. Without the project this will not happen. The Government of Belize recognises the savanna ecosystem as a relatively untapped potential source of revenue from forestry, agricultural and ecotourism operations but understands that its exploitation needs to be managed on the basis of scientific information so that areas of high biodiversity or outstanding landscape value within savannas are protected. Our capacity-building activities will provide a larger pool of local staff trained in conducting the required taxonomic and vegetation surveys to inform conservation-minded management of this ecosystem and reduce reliance on foreign researchers. As a result of the education and awareness activities which will continue beyond the end of the project, there will be a greater understanding of the economic and social value of the savanna ecosystem among the public in general and by natural resource managers in particular. These potential benefits are feasible and attainable during the project lifetime because of our preparatory work and the strong commitment of our local partners.

15. State whether or not the project will reach a stable and sustainable end point. If the project is not discrete, but is part of a progressive approach, give details of the exit strategy and show how relevant activities will be continued to secure the benefits from the project. Where individuals receive advanced training, for example, what will happen should that individual leave? (Max 200 words)

The end point is to produce the first national checklist of savanna plants and a conservation evaluation of the savanna ecosystem, based on analysis of existing collections, local knowledge, vegetation surveys, plant collecting and more detailed mapping of the national distribution of the ecosystem. The project will consolidate and augment existing knowledge about the savannas, making this widely available for the first time. Recognising that further surveys will be required to allow future monitoring, the training is designed to build up sufficient local capacity so that future assessments can be conducted by local staff in country. Recipients of advanced training such as the Darwin Support Officer and UB faculty, will provide 'cascade training' for other local staff. General training will be available to a wide audience so that the pool of locally skilled staff can be increased. The project will establish protocols for data collection, curation and encoding using standard principles so that the specimens remain accessible in the herbarium and products such as the guidebooks can be re-generated from the database in the future. UB has agreed to host and maintain the database beyond the end of the project, so that the outputs will remain accessible.

16. If your project includes training and development, please indicate how you will assess the training needs in relation to the overall purpose of the project. Who are the target groups? How will the training be delivered? What skills and knowledge to you expect the beneficiaries to obtain. How will you measure training effectiveness. (max 300 words)

You should address each of these points.

Training needs in taxonomy, field botany, GIS and herbarium curation were identified by the National Capacity Self-Assessment (NCSA, 2005) which highlighted these as constraining progress towards addressing national responsibilities under the CBD. Annual MSc field courses on plant identification and field botany have been run in Belize by the RBGE since 2000. Interest in these quickly developed within UB and FD, and since 2004 Belizean students/professionals have participated each year, with feedback extremely positive due to the improved employment opportunities the training provides. The training programme proposed will expand the focus of these field courses and modify the techniques developed by RBGE and UB to provide professional training courses for Belizean undergraduates, post graduates and conservation professionals focusing on the savanna ecosystem and the biodiversity research/management needs of the country. The broad target groups to receive training have been identified through discussions with national education and conservation leaders who wish to increase the capacity of their own students/staff to undertake future biodiversity, herbarium and GIS work with reduced reliance on external support. Because of Belize's small population it is eminently feasible for the courses to equip more successfully a generation of young research and conservation professionals to collect, identify, process, manage and interpret the information required to drive improved national conservation planning of the savanna. Training will be delivered by members of staff at Edinburgh University and RBGE experienced with teaching these disciplines in a field setting in Belize, in collaboration with partners from UB, BBG and FD. In addition to the training courses, all fieldwork throughout the project will be conducted with university student participants. Short-term training effectiveness will be measured by participant's evaluation forms and in the longer term by any increased level of skills reported by Belize's future NCSA reports to the CBD.

LOGICAL FRAMEWORK

17. Please enter the details of your project onto the matrix using the note at Annex 3 of the Guidance Note. This should not have substantially changed from the Logical Framework submitted with your Stage 1 application. Please highlight any changes. (Use no smaller than Arial 10 pt)

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.			
Sub-Goal: Conservation and sustainable use of lowland savannas in Belize.	Areas of greatest conservation value within savannas receive protection; Remaining areas managed for timber and non-timber products and to develop sustainable livelihoods.	Findings inform revision of National Protected Area Systems Plan (NPASP) Data assimilated into Sustainable Forest Management Plans by FD and PfB Progress reported in Belize's 4th National Report to the CBD.	
Purpose To identify priority areas for conservation within the lowland savannas of Belize, by undertaking baseline taxonomic research and vegetation mapping of this ecosystem and enhancing the capacity of local institutions to continue this activity Disseminate findings to raise awareness about value of the savanna ecosystem in Belize.	Existing savanna specimens in national herbarium re-curated; Partners' capacity in taxonomy, field collecting and mapping increased through training programmes and extensive joint working with UK partners; Consolidated species database and checklist created and published. Field Guide to savanna plants published; Summary report and mapping distributed to NPAC, FD and other agencies managing savanna lands; Curriculum-focused educational materials disseminated to scientific, educational and public sectors.	Data accessible on CHM by EoP; Specimens available for consultation; Checklist and Field Guide widely distributed; Local staff begin to undertake national biodiversity monitoring currently done by foreign researchers; Acceptance of final report by National Protected Areas Commission (NPAC) Recommendations assimilated into revised NPASP; National educational programmes incorporate teaching materials; Visitor information and facilities at BBG; visitor counts at BBG increase.	Belize continues to work towards meeting its obligations under the CBD; Support for national herbarium continues; CBD Focal Point continues to prioritise the need to improve capacity for taxonomy and for monitoring and assessment; Partner institutions in Belize continue to receive similar levels of resourcing; Belize's Biodiversity Resource Database (BERDS) and the National Clearing House Mechanism (CHM) remain supported; Ministry of Education continues to support testing of curriculum-focused teaching materials in local schools.

2/1240

Outputs (add or delete rows as necessary) 1. Enhanced capacity to conduct savanna field surveys, collect and name plants and curate specimens.	Existing herbarium savanna specimens re-curated; ~1,000 new collections made and determined. New specimens incorporated in national herbarium; ~ 40 people trained in (i) plant collecting, (ii) taxonomy & curation, (iii) GPS/GIS for field surveys.	Fieldwork reported; specimens present in herbarium; records accessible in database; Reports on training courses, materials delivered and evaluation of quality of the training by participants.	Fieldwork completed; Access to reference collections and herbarium.
2. Checklist(s) of savanna plants, highlighting threatened, rare and endemic species, with local names.	Checklist drafted in yr 1; Revised and updated by EoP.	Copy submitted with annual report.	Botanical Fieldwork completed; Access to reference collections and herbarium.
3. Updated mapping of savanna habitats, localities of the data collections and conservation hotspots.	Mapping to guide field collecting produced during yr 1; Maps identifying priority areas for conservation by end yr 2; Maps validated/ revised using local knowledge by EoP.	Maps submitted with annual report.	Good quality imagery available. Areas accessible for ground validation.
4. Scientific papers and reports	At least 2 articles presented at international meetings and published in peer reviewed journals by EoP; At least 3 professional reports produced.	Copies of all oral presentations and publications submitted with annual report.	Material of acceptable quality.
5. Photographic Field Guide to the commoner savanna plants, trees and shrubs, with descriptive notes.	Numbers of entries included in initial version of the guide published in yr2 and in final version by EoP; Number of hard copies distributed	Copy of Guide/ URL of latest digital version submitted with annual report; Numbers of copies downloaded, printed and sold summarised yearly.	Areas accessible for fieldwork.
6. Savanna trail established at BBG	Trail constructed and open to public	Log of visitor numbers to trail and number of Trail guides distributed.	Continued support from BBG
7. Educational materials prepared for use in higher education, schools and for general public.	Reports on materials generated by partners (UB, BBG); Reports on use of materials by partners and wider NGO community.	Samples of materials/ URLs submitted with annual report; Materials assessed by university and school teachers.	Support from Govt Ministry of Education.

2/1240

Activities (details in workplan)

1.1 Project website launched and periodically updated;
1.2 Annual meeting of project partners
1.3 Plant diversity and vegetation habitat surveys in lowland savanna areas;
1.4 Live plant collections made for Belize Botanic Garden Trail and educational displays;
1.5 Determination of savanna collections using UK herbaria and international research literature;
1.6 Re-curation of savanna collections in Belize's national herbarium;
1.7 Development of database of savanna plant distributions and habitats;
1.8 Training workshops in field botany, taxonomy, herbarium curation and GPS/GIS;
1.9 Database available on-line;
2.1 -2.2 Checklist of savanna plants (highlighting spp. of conservation importance) developed and published;
3.1 Interpretation of remote sensing of savanna areas to guide field data collection programme;
3.2 Maps produced of plant diversity, habitat variety and recommended priority conservation areas within lowland savannas;
3.3-- 3.5 Consultation and reporting to Forestry Department on savanna areas of high conservation value and areas of potential economic/ecotouristic value
4.1 – 4.4 Peer-reviewed academic research papers on Belizean savanna plant biodiversity, phytogeography and conservation (2);
5.1 -5.2 Photographic savanna plant fieldguide developed, tested and distributed(hard copies and on-line version)
6.1 -6.3 Creation of savanna educational trail at Belize Botanic Garden and conduct of visits to trail by local schools and university students.
7.1 -7.4 Educational resources for a) school and b) university use drafted, tested and delivered

Monitoring activities:

a) the Darwin Initiative's own reporting procedures;
b) Edinburgh University and the RBGE's internal project assessment system;
c) annual meetings in Belize between UK and Belize project partners;
d) biennial updates on project website; provision of web-based feedback opportunities for Belizean and UK project staff and other stakeholders;
e) annual reports from Belize Botanic Garden to project PI on delivery of savanna plant trail;
f) collation of Belize Botanic Garden visitation records related to savanna plant trail;
g) attendance records & feedback forms from project training workshops;
h) teacher and professor feedback/evaluation forms on education resources;
i) report by independent educational consultant and savanna specialist on the school and higher education resources;
j) records of numbers and location of field guides distributed (year 3);
k) assessment of re-curated savanna collections by Forest Department herbarium staff;
l) commitment by partners at final conservation planning workshop to use the findings to recommend amendments to the National Protected Areas Systems Plan;

2/1240

18. 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.

	Activity	Months	Year 1				Year 2				Year 3			
			1	2	3	4	1	2	3	4	1	2	3	4
1.1	Project website launched and periodically updated	4												
1.2	Annual meeting of project partners	0.5												
1.3	Plant diversity surveys conducted in lowland savanna	6												
1.4	Savanna live collections made for Belize Botanic Garden education display & trail	2												
1.5	Determination of savanna collections using UK herbaria & literature	2												
1.6	Re-curation of savanna collections in Belize's national herbarium	2												
1.7	Development of savanna plant distribution database	6												
1.8	Training in field botany, taxonomy, herbarium curation, GPS survey & GIS	2												
1.9	Plant distribution database on-line	3												
2.1	Checklist of savanna plants highlighting spp. of conservation importance drafted	6												
2.2	Final checklist of savanna plants produced in both digital and printed form	3												
3.1	Interpretation of remote sensing of savanna areas to guide field data collection programme	8												
3.2	Final map produced of plant diversity, habitat variety and priority conservation areas	4												
3.3	Draft project report on the priority savanna areas for conservation submitted to FD	2												
3.4	Consultative workshop on savanna biodiversity & conservation priorities	1												
3.5	Final project report on the priority savanna areas for conservation submitted to FD	1												
4.1	Floristic paper on Belizean savannas written	2												
4.2	Floristic paper on Belizean savannas submitted	1												
4.3	Paper on the conservation of Belizean savannas written	2												
4.4	Paper on the conservation of Belizean savannas submitted	1												
5.1	Photographic savanna fieldguide developed and field tested	4												
5.2	Finalised photographic fieldguide completed, printed & made available on-line	2												
6.1	Belize Botanic Garden savanna collections planted, landscaped & interpreted	9												
6.2	Belize Botanic Garden savanna educational trail open to public	0.5												
6.3	Visits from local schools and university students to the BBG Savanna Trail	1												
7.1	Draft a) school curriculum and b) university savanna educational resources drafted	6												
7.2	Draft a) school curriculum and b) university savanna education resources tested	4												
7.3	Evaluation of resources by academic consultant with international savanna expertise	1												
7.4	Finalised resources delivered to University of Belize, Galen University and Min. of Education	1												

2/1240

19. Please indicate which of the following Standard Measures you are likely to report against. You will not necessarily plan to cover all these Standard Measures in your project.

Standard Measure No	Description	Tick if Relevant
1A	Number of people to submit thesis for PhD qualification (in host country)	
1B	Number of people to attain PhD qualification (in host country)	
2	Number of people to attain Masters qualification (MSc, MPhil etc)	
3	Number of people to attain other qualifications (ie. Not outputs 1 or 2 above)	
4A	Number of undergraduate students to receive training	✓
4B	Number of training weeks to be provided	✓
4C	Number of postgraduate students to receive training	✓
4D	Number of training weeks to be provided	✓
5	Number of people to receive at least one year of training (which does not fall into categories 1-4 above)	
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above)	✓
6B	Number of training weeks to be provided	✓
7	Number of (ie different types - not volume - of material produced) training materials to be produced for use by host country	✓
8	Number of weeks to be spent by UK project staff on project work in the host country	✓
9	Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies in the host country	
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording	✓
11A	Number of papers to be published in peer reviewed journals	✓
11B	Number of papers to be submitted to peer reviewed journals	✓
12A	Number of computer based databases to be **established** and handed over to host country	
12B	Number of computer based databases to be **enhanced** and handed over to host country	✓
13A	Number of species reference collections to be **established** and handed over to host country(ies)	
13B	Number of species reference collections to be **enhanced** and handed over to host country(ies)	✓
14A	Number of conferences/seminars/ workshops to be **organised** to present/disseminate findings	✓
14B	Number of conferences/seminars/ workshops **attended** at which findings from Darwin project work will be presented/ disseminated.	✓
15A	Number of national press releases in host country(ies)	✓
15B	Number of local press releases in host country(ies)	✓
15C	Number of national press releases in UK	✓
15D	Number of local press releases in UK	
16A	Number of newsletters to be produced	✓
16B	Estimated circulation of each newsletter in the host country(ies)	✓
16C	Estimated circulation of each newsletter in the UK	
17A	Number of dissemination networks to be **established**	
17B	Number of dissemination networks to be **enhanced**/ **extended**	✓
18A	Number of national TV programmes/features in host country(ies)	✓
18B	Number of national TV programmes/features in UK	
18C	Number of local TV programmes/features in host country(ies)	✓
18D	Number of local TV programmes/features in UK	
19A	Number of national radio interviews/features in host county(ies)	✓
19B	Number of national radio interviews/features in UK	
19C	Number of local radio interviews/features in host country(ies)	✓
19D	Number of local radio interviews/features in UK	
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)	
21	Number of permanent educational/training/research facilities or organisations to be established and then continued after Darwin funding has ceased	✓
22	Number of permanent field plots to be established during the project and continued after Darwin funding has ceased	
23	Value of resources raised from other sources (ie in addition to Darwin funding) for project work	✓

PROJECT BASED MONITORING AND EVALUATION

20. Describe, referring to the Indicators in the Logical Framework, how the progress of the project will be monitored and evaluated, including towards delivery of its outputs and in terms of achieving its overall purpose. This should be during the lifetime of the project and at its conclusion. Please include information on how host country partners will be included in the monitoring and evaluation.

Progress toward milestones and outputs to achieve the Logical Framework indicators will be monitored and evaluated through the Darwin Initiative's own reporting procedures as well as Edinburgh University and the RBGE's internal project assessment system (linked to staff reporting and forward job planning). All the local partners will be involved in monitoring and evaluation of this project. Delivery of the outputs according to the workplan will be monitored by requiring annual reporting from UB on the activities of the Darwin Support Officer and reports from BBG on the progress of the savanna plant trail (mid-year 2) and the numbers of visitors (mid-year 3). UB and BBG will also be required to report on progress in year 3 to produce the draft educational materials. This monitoring is intended to allow any slippage or unanticipated problems to be recognised and action taken as early as possible. There will be an annual meeting in Belize attended by all project partners to review progress against the agreed milestones.

Local partners will also have specific roles in the evaluation of the project. Herbarium staff of the FD will make an assessment of the re-curated savanna collections. All participants at training workshops will be asked to complete evaluation forms. while the wider community of stakeholders in Belize will be able to provide evaluative comments on the project through a web-based feedback form on the project website. The educational materials produced by the local partners will be evaluated by asking the teachers/ lecturers who test them, to complete an evaluation form. In addition, an international educator with expertise in the savanna ecosystem will conduct an independent evaluation of the materials produced. The overall findings of the project will be evaluated through an in-country workshop in year 3 at which the draft report and key findings will be summarised to the FD, as focal point for the CBD, to the project partners and to other stakeholders. The objective of the workshop will be to obtain an overall evaluation from the local partners about the value of the project and to seek commitment from them to use the findings to recommend amendments as necessary to protect savanna biodiversity and promote its sustainable use through the National Protected Areas Systems Plan.

FUNDING AND BUDGET

Please complete the separate Excel spreadsheet which will provide the Budget information for this application. Some of the questions below refer to the information in this spreadsheet.

NB: Please state all costs by financial year (April to March). Use current prices – and include anticipated inflation, as appropriate up to 3% per annum. The Darwin Initiative will not be able to agree increases in grants to cover inflation on UK costs once grants are awarded.

21. How is your organisation currently funded? (max 100 words)

The University of Edinburgh's income for the last reported financial year (2006/07) totalled £477,062k. This comprised the following:

Core Funding Council income, including for major refurbishment projects and new research pooling initiatives, totalled £162,865k.

Income secured through tuition fees and education contracts reflecting a growth in international student numbers amounted to £73,373k.

Research grants and contracts from a broad portfolio of funders including UK Research Councils, charities, EU and Government departments last year summed £120,849k,

Income secured from endowments and investments came to £14,871k and other income, including donations and legacies totalled £105,104k.

22. Provide details of all <u>confirmed</u> funding sources identified in the Budget that will be put towards the costs of the project, including any income from other public bodies, private sponsorship, donations, trusts, fees or trading activity. Please include any additional <u>unconfirmed</u> funding the project will attract to carry out addition work during or beyond the project lifetime. Indicate those funding sources which are confirmed.

Confirmed:

University of Edinburgh

- Project Leader – salary, ERNIC, pension, overheads and estate costs.
- Additional specialist GIS and remote sensing software licences.
- Remote sensing data – already acquired for project area.
- Additional GPS surveying equipment and software.

Royal Botanic Garden Edinburgh

- Herbarium and curation expertise – salary, ERNIC, pension, overheads and estate costs.
- Additional herbarium specimen preparation costs.

University of Belize

- Host Country Project Coordination - salary, social costs, pension, overheads and estate costs.
- Conference, workshop and seminar venues and support costs.
- Local travel costs for Darwin Support Officer.

Programme for Belize

- Conference, workshop and seminar venues and support costs.
- Use of field research station and laboratory.

Duncan Moss (Principal Consultant at Ordnance Survey)

- Provision of specialist consultancy in GPS, positioning technologies and mapping.

Emeritus Professor Peter Furley (formerly University of Edinburgh)

- Provision of specialist consultancy in savanna biogeography.

Unconfirmed:

University of Edinburgh

- Provision of one MSc 'Geographical Information Science' student in year two to work on self–contained dissertation project that will be directly aligned to the DI project and adds value.

Royal Botanic Garden Edinburgh

- Provision of up one MSc 'Biodiversity & Taxonomy of Plants' student in year two to work on self–contained dissertation project that will be directly aligned to the DI project and adds value.

GeoEye Foundation

- Grant to acquire additional high resolution remote sensing data to supplement the data already acquired and/or budgeted for in this proposal. This grant will be applied for should this DI project be funded.

Planet Action

- Grant to provide GIS and remote sensing software licences for legacy use in Host Country. This grant will be applied for should this DI project be funded.

23. Please give details of any further funding resources (confirmed or unconfirmed) sought from the host country partner (s) or others for this project that are not already detailed in the Budget or Question 22. This will include donations in kind or un-costed support eg accommodation. (max 50 words per box)

Financial resources: **None.**
Funding in kind: **None.**

FCO NOTIFICATIONS

Please check the box if you think that there are sensitivities that the Foreign and Commonwealth Office will need to be aware of should they want to publicise the project's success in the Darwin competition in the host country. ☐

Please indicate whether you have contacted the local UK embassy or High Commission directly to discuss security issues (see Guidance Notes) and attach any advice you have received from them.

Yes (no written advice) ☒ **Yes, advice attached** ☐ **No** ☐

CERTIFICATION 2009/10

On behalf of the trustees/company* of Edinburgh Research & Innovation

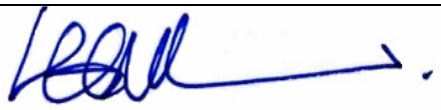
(*delete as appropriate)

I apply for a grant of £287,951 in respect of expenditure to be incurred in the financial year ending 31 March 2010 on the activities 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 UK institution to submit applications and sign contracts on their behalf.)

I enclose a copy of the organisation's most recent audited accounts and annual report, CVs for project principals and letters of support.

Name (block capitals)	HAMISH MACANDREW
Position in the organisation	HEAD OF RESEARCH SUPPORT & DEVELOPMENT

Signed  **Date:** 28/11/08

Stage 2 Application - Checklist for submission

	Check
Have you provided actual start and end dates for your project?	✓
Have you provided your budget based on UK government financial years ie 1 April – 31 March?	✓
Have you checked that your budget is complete, correctly adds up and that you have included the correct final total on the top page of the application?	✓
Is the concept note within 1,000 words?	✓
Is the logframe no longer than 2 pages and have you highlighted any changes since Stage 1?	✓
Has your application been signed by a suitably authorised individual? (clear electronic or scanned signatures are acceptable)	✓
Have you included a 1 page CV for the Project Leader, any other UK staff working 50%+ on this project, and for a main individual in each overseas partner organisation?	✓
Have you included a letter of support from the main overseas partner organisations?	✓
Have you checked with the FCO in the project country/ies and have you included any evidence of this?	✓
Have you included a copy of your most recent annual report and accounts? http://www.finance.ed.ac.uk/financialstatements/uoe_reports_fin_statements_06-07.pdf	✓
Have you read the Guidance Notes ?	✓

Once you have answered Yes to the questions above, please submit the application, not later than midnight GMT on **Monday 1 December 2008** to Darwin-Applications@ltsi.co.uk using the application number (from your Stage 1 feedback letter) and the first few words of the project title **as the subject of your email**. However, 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 (eg whether the e-mail is 1 of 2, 2 of 3 etc). **In addition**, a hard copy of the application and any supporting documents not available electronically should be submitted to the Darwin Applications Management Unit, c/o ECTF, Pentlands Science Park, Bush Loan, Penicuik EH26 0PL **postmarked** not later than **Tuesday 2 December 2008.**

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 the Darwin Initiative. Application form data will also be held by contractors dealing with Darwin Initiative 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 (ie name, contact details and location of project work) on the Darwin Initiative and Defra 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 Foreign and Commonwealth Office posts outside the United Kingdom, 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.**