17-012

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 to the database is highlighted blue.

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

Name:	**Address:**
School of Biological Sciences	University of Southampton, Boldrewood Campus, Southampton SO16 7PX, UK

2. Project title (not exceeding 10 words)

Belize large-mammal corridor project

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

Proposed start date: 1 April 2009. **Duration of project:** 36 mths + 4 mths no cost. **End date:** 31 July 2012					
Darwin funding requested	**2009/10** £66,824	**2010/11** £69,408	**2011/2012** £37,757	**2012/13** £0	**Total** £173,989

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

Plan a workable natural corridor to connect protected areas in Belize; implement this into the framework of existing protected areas and zoning plans of Belize; establish an in-country tradition of training skills for Belizeans to study their own wildlife, and institutionalise this within the launch of the Environmental Research Institute at the University of Belize.

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 their time on project)**	**Main project partner and co-ordinator in host country/ies**
Surname	Doncaster		Harmsen
Forename (s)	C. Patrick		Bart
Post held	Reader in Ecology		Jaguar Coordinator Belize
Institution (if different to above)	As above		Panthera Foundation
Department	As above		Jaguar Program
Telephone			
Email			

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

Reference No	Project Leader	Title
N/A		

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)
Southampton is one of the UK's top 10 research universities. Its 145 staff in the School of Biological Sciences, including 44 academics, aim to advance biological knolwedge by research, communicate biological understanding through learning, and apply biological know-how for the benefit of society.

Activities (50 words)
Outputs in journals of the highest international standing (443 research papers since 2005, including 6 in *Nature* and *Science* [of which one by the applicant]). Higher education for 730 undergraduate students, 160 PhD students, and 50 postdoctoral researchers.

Achievements (50 words)
Grade 5 rating for research on the last government-sponsored Research Assessment Exercise (RAE); and 23/24 rating on the last government-sponsored assessment of quality in learning and teaching (QAE). The project leader has research publications on conceptual and practical issues in conservation and ecology, including mammal ecology in Belize.

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. Please copy/delete boxes for more or fewer partnerships.

Partner Name:	**Details (including roles and responsibilities and capacity to engage with the project):**
Panthera Foundation	Panthera has an unparalleled level of on-the-ground expertise in mammal monitoring in Belize, with a visiting scientist connection already established to the UK University of Southampton (UoS, which provides scientific and management expertise). Both institutions are committed to helping build research capacity in Belize. Panthera will assist the project with a large proportion of matched funds (see financial pages). The organisation will be involved at all stages of the project. Its capacity encompasses (*a*) deployment of personnel, with Bart Harmsen 100% on the project for the first 2 years and 50% thereafter (see his attached CV); (*b*) provision of a large portion of necessary field equipment (camera traps, telemetry and trapping equipment). Panthera's principal interest is in the regional connectivity of jaguars, and hence also their prey which includes most of the animals described in our species list for the project. Panthera agrees upon the further inclusion of tapirs, pumas and ocelots as non-prey items. Panthera is uniquely well placed to engage with the project. Its scientists have been working on corridor functionality for cats for over 20 years and the organisation includes several of the world's leading

	cat specialists. In 2006, the CEO of Panthera organised a meeting in Panama of all Ministers of the Environment from Mesoamerican countries, at which he advocated the functional advantages of setting up corridors for jaguar populations spanning the region. All ministers present on behalf of the Comisión Centroamericana de Ambiente y Desarrollo (CCAD; the Central American Commission for Environment and Development) signed a pledge to work towards realising this complete corridor (http://www.panthera.org/jaguar_corridor.html). Recent ground-truth mapping by Panthera of potential corridor functionality for jaguars has indicated that the only connection route from Honduras to northern Guatemala and Mexico has to go through the remaining intact forest patches in Belize. This is because the alternative 'Western Route' through Guatemala has already been decimated by deforestation for milpa, cattle farms and agriculture. See letter of support from Dr Howard Quigley, Director of Western Hemisphere Felid Programs, Panthera.

Partner Name:	**Details (including roles and responsibilities and capacity to engage with the project):**
University of Belize (UoB)	The UoB will provide the infrastructure for capacity building with its Environmental Research Institute to be inaugurated in January 2009. The Institute's Science Director Elma Kay will contribute 8% of her time to the project over 2 years and 4% in the final year. This institute aims to train the next generation of Belizean environmental biologists to become highly skilled in wildlife monitoring and conservation management; the Darwin project will input expertise to the development of training programmes focused on issues with establishing wildlife corridors. The UoB will become involved after the corridor zone habitats have been mapped and all survey grids, camera grids and transect lines have been established. The university will provide the students for mammal monitoring, and the capacity for them to do the necessary computer analyses and lab work, specifically teaching space, computer facilities, lab space and storage space. See letter of support from Dr Thippi Thiagarajan, Dean of Faculty of Science and Technology, University of Belize…

Partner Name:	**Details (including roles and responsibilities and capacity to engage with the project):**
Belize Forest Department (BFD)	BFD is the government body responsible for implementing the corridor of Priority Areas that will issue from this project. The Belize Environment Minister has already indicated his interest in securing a wildlife corridor between the two main blocks of protected wilderness in Belize. His department currently has staff member George Hanson seconded to Panthera to advise on legal logistics. He will devote 35% of his time to the project over 2 years and 17% in the final year, and will be the contact person between the BFD and the project. The BFD will be involved at the stages of policy changes and for conveying our reports to government. In addition to deployment of personnel, the Department's capacity to be involved in the project encompasses provision of meeting rooms, and carrying out the necessary policy changes. See letters of support from (a) The Honourable Gaspar Vega, Deputy Prime Minister of Belize and Minister of Natural Resources and the Environment, Belize; (b) Mr Wilber Sabido, The Chief Forest Officer, Belize Forest Department, Ministry of Natural Resources and the Environment, Belize.

9a. Have you consulted stakeholders not already mentioned above? x☐ **Yes** ☐ **No**
If yes, please give details:
First contacts with farmers and village chairmen have already been made within and around the corridor area. We have already secured more than 90% endorsement of the study on the private land surrounding the area and 100% endorsement of all the larger more important landowners.

9b. Do you intend to consult other stakeholders? x ☐ **Yes** ☐ **No**
If yes, please give details:
We are specifically targeting the hunters and extractors of forest biota who are moving into the heart of the corridor area. These are difficult stakeholders to approach, since they are not official groups. The ones that we have identified are either indifferent to our study or generally enthusiastic because of what they see as long-term benefits to sustainable exploitation arising from the project**.**

9c. Have you had any (other) contact with the government not already stated? x☐ **Yes** ☐ **No**
If yes, please give details:
We have developed strong contacts with government at all levels. In addition to a long-term link existing between Panthera and the BFD, we have been in contact with the Ministry of Agriculture to initiate development of our work with livestock owners. They have reacted very positively to our project by wanting to develop an overall strategy for dealing with human-wildlife conflict. We have also initiated contact with the Belize Tourism Board by promoting the corridor plan as potentially raising the profile of eco-tourism in the vicinity of both the cruise-ship harbour and the airport of Belize City.

9d. Is any liaison proposed with the CBD/CMS/CITES focal point in the host country? x☐**Yes** ☐ **No**
If yes, please give details:
The current Belize IUCN committee has indicated to us that the proposed study area is the most important corridor area of the country, and has endorsed the objective to seek protection in law.

PROJECT DETAILS

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

Belize has protected 40% of its land area, supporting a wealth of wildlife unrivalled by its neighbours. This relatively large coverage is split into two conservation blocks: the Maya Mountains in the south (5200 km^2) and the Belizean part of the Selva Maya in the north (1900 km^2), separated by a large unprotected strip in the middle (900 km^2). Satellite images show a contiguous belt of wilderness crossing this strip through unprotected and privately-owned land to join the two protected blocks. This wilderness belt functions as a vital corridor connecting the only two large natural areas within Belize, and as such it constitutes a key component of the proposed Mesoamerican Biological Corridor. Two highways sever the belt, currently with low levels of traffic. Significant urban development is planned for the unprotected strip, however, which will fragment the wilderness belt and increase highway traffic, isolating the remnants.

The current Belizean Government, which retains power for another 4½ years, has already indicated to us its interest in securing the corridor (letter from Deputy Prime Minister and Environment Minister accompanies this Stage-2 application). They require us to demonstrate that the wilderness belt can sustain its corridor function with minimum impact on economic development, through the deployment of Conservation Priority Areas. We are thereby presented with an opportunity to propose zoning of development within the unprotected strip, giving priority to selected areas for formal protection from some or all development. Our Darwin proposal is an initiative to input a scientifically balanced voice to the dialogue between agencies for wildlife conservation, sustainable livelihoods, and economic development. Unregulated development of the unprotected strip will certainly isolate Belize's two existing protected blocks from each other within the next 10 years.

The Darwin project's principal focus is on species whose population viability most depends on large areas of contiguous wilderness. In Belize these are best represented by the medium to large mammals living at naturally low densities. We will enumerate land tenure and population abundance throughout the wilderness belt for a range of mammals (jaguar, puma, ocelot, tapir, white-lipped and collared peccaries, red brocket and white tailed deer, coati paca, armadillo), using large-scale camera trapping, sign surveys, telemetry and mark-recapture. We will assess current population viability within the corridor, and principal dispersal routes along it. The study will focus particularly on abilities of predator and prey species to cross the two major highways severing the corridor. Potential conflicts and compatibilities throughout the corridor will be assessed with GIS analysis of all layers of need for human sustainability and development, and wildlife sustainability and mobility.

The University of Southampton (UoS) will provide the project coordinator, responsible for data collection designs and scientific integrity. He has 6 years of research experience within Belize on jaguar ecology, and co-authorship on studies of peccaries and jaguars, and a statistics textbook. Two project personnel are doctoral and postdoctoral graduates of UoS, who have worked on jaguars in Belize for the last 4-6 years.

Panthera is the most influential organisation researching jaguars worldwide and employs one of the project personnel as jaguar coordinator for Belize. Jaguars are a flagship species of concern in Belize, and the development of an action plan to safeguard their future is high on the national agenda. With large home-ranges, this is a model species for testing corridor functionality. Panthera will provide camera traps for this purpose.

The University of Belize (UoB) is one of only two Belizean centres for higher education, and the only public one. Founded in 2000, its ambition is to raise environmental awareness and understanding amongst Belizeans, recognizing that communities play an integral role in managing natural resources. Its strategic goal is to facilitate sustainable development in Belize by bridging a current gap between science and people. The recently initiated Bachelor programme in Natural Resources Management forms one arm of this strategy. Although the University's focus is educational, its staff include highly trained personnel with research experience. The second arm will be the inauguration later this year of its Environmental Research Institute (ERI). The first of its kind in Belize, the institute's principal mission is to build scientific capacity amongst Belizean university students through research and training. Its inaugural projects will focus on sustainable development. The ERI must begin life with the launch of large-scale projects. The Darwin project will be amongst the first, and an essential foundation for the institute as a functioning public body. The UoB has many enthusiastic students with energy for wildlife conservation, but lacks resources to harness them for work on well-funded projects. They will benefit from UoS expertise provided by

the Darwin project, in combination with UoB experts. The UoB will provision the Darwin project with Belizean personnel, to collect the field data necessary for surveying wildlife abundance and movement and exploitation for bushmeat, to contribute socio-economic considerations to the design of priority areas, and for post-project monitoring. This provision will take the form of field training courses for students and professionals in natural resource management.

The Belize Forest Department (BFD) is the government body responsible for implementing an eventual corridor of Priority Areas. They will provide staff time to advise on policy, current land ownership, and zoning potential of the different areas within the corridor. A BFD employee currently on a 2-year secondment to Panthera will be the main link between BFD and Darwin personnel. As locally placed institutions, BFD and UoB are especially suited to incorporating the socioeconomic aspects of conflict resolution into the planning of the corridor, accounting for local livelihoods and initiating sustainable economic activity.

The combined involvement of Belize-based organisations from the charitable sector (Panthera: wildlife expertise), the academic sector (UoB: socio-economic factors), and government (BFD: policy and implementation) will ensure outputs of national and international importance. These include: vital information on corridor use for several neotropical mammals; a scientifically balanced voice in the dialogue between stakeholders with sustainability and development priorities; an institutional framework for instilling a tradition of Belizeans studying their own ecosystems; a plan with maximised chances of implementation as policy.

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

The connectivity issue at the heart of our proposal has been raised in Belizean government reports written by consultants for the National Protected Areas Policy and System Plan (NPAPSP) (http://biological-diversity.info/NPAPSP.htm). Belizean research committees have identified the current gap between the two largest blocks of protected land in Belize as the only viable site for a wildlife corridor connecting Honduras to northern Guatemala and Mexico (e.g., http://www.biodiversity.bz/downloads/protected_areas1.jpg). But no action has yet been taken to establish and protect a corridor. This proposal tackles the lacuna directly by documenting the functional value of the system and working towards implementing the corridor. This is therefore an entirely new initiative, since nothing is yet documented of the ecosystem within the unprotected corridor area. Our findings on wildlife function in relation to socio-economic needs will provide the substance for a convincing case that can sway the government to formally protect the area with measures that encourage sustainable livelihoods for local people and a healthy wildlife ecosystem on the national scale of Belize. The project's substantial capital equipment costs for monitoring wildlife are integral to its proximal objective of information-gathering for delineating the protected zone, and to its legacy of equipping the partners in Belize to institutionalise and sustain a tradition of mammal monitoring as part of Belizean education programmes. The appointment of a mammal-monitoring coordinator on the project will be followed up with training by UK staff Doncaster and Belize-based staff Harmsen, Figueroa and Foster in the delivery of courses on wildlife monitoring and natural resources management that the UoB do not currently have the expertise to put on.

11b. Are you aware of any other individuals/organisations/Darwin Initiative projects carrying out similar work? **x☐ 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:

The Centre for Ecology & Hydrology (CEH) at Lancaster had a Darwin-funded project May 2005 to May 2008: 'Developing integrated assessment of biodiversity in secondary forest in Belize'.

Similarities:

- One of their study sites was the Cockscomb Basin Wildlife Sanctuary, where much information on jaguar ecology has also been obtained by the partner on this project, Bart Harmsen. He is also currently working with Paul and Zoe Walker who run WildTracks. This was a Partner Organisation on the CEH project, so we can benefit from relevant prior Darwin data on habitats.
- They brought in Dr Elma Kay at University of Belize during their project. Our project has the

value-added benefit of her integral role in the partnership that we have with created her new Environmental Research Institute at the UoB.

Differences:
- Their objective was to collect biodiversity baseline data in three protected areas, to develop a basic Geographic Information System (GIS) of habitat types. We have a distinctly different objective, to secure a wildlife corridor for mammals, and to equip the UoB for sustained wildlife monitoring.
- They focused on plants and secondary vegetation, amphibians, birds, bats. Our focus is on a narrower range of large- to medium-sized mammals.
-Two of their study sites: Fireburn Reserve, and Crooked Tree lie outside our area of interest.

Complementarities:
- Our project will run through unprotected areas between their three protected sites.
- We intend working with Dr Kay (coordinating our educational component) and the Walkers (advisors on vegetation and habitat types).

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)	x☐ **Yes** ☐ **No**
CITES	x☐ **Yes** ☐ **No**
Convention on Migratory Species (CMS)	☐ **Yes** ☐**x No**

What problem is this project addressing and how was it identified? (150 words)
The project explicitly tackles the problem of connectivity of natural habitat within Belize, in order to enhance the flow of individuals and genes between protected blocks, particularly of medium to large mammals. The need for this project was identified after viability analyses for jaguars, tapirs and white lipped peccaries indicated that the Maya Mountains, the largest contiguous protected block in Belize, may not be large enough to sustain viable populations on its own (Meerman 2007, National Protected Area Systems Analysis). The isolation of this large block can be addressed by connecting it to a second protected block in the northern part of the country where populations of these mammals extend also into Guatemala and Mexico. Panthera and Belizean scientific committees have independently concluded that the proposed corridor area is the only viable connection between the protected blocks, providing a key link in the proposed Mesoamerican Biological Corridor.

What will change as a result of this project? (150 words)
The collaboration directly with government on a strategic plan for the wildlife corridor will maximise the opportunity for its implementation into law. This project will provide Belize with a network of protected areas that ensures enduring connectivity of wilderness throughout the country, thereby also optimising the connectivity of tropical ecosystems with neighbouring countries. The formal connection to the main national university in Belize will enhance the capacity for Belizeans to study, appreciate, monitor and sustain their own wildlife. The ERI is to be created as a permanent institution from foundations that include this project. In order to help build the Institute's capacity for wildlife monitoring, this project will support an appointment to the ERI of a teacher in Geographic Information Systems (GIS) and wildlife monitoring. This person will be trained by Darwin personnel, and the ERI will commit to seeking outside funding to continue the appointment post-project.

Why is the project important for the conservation of biodiversity? (150 words)
The need for connectivity between protected areas in Belize has been identified by government and NGO reports concerning the isolation of the Maya Mountains and the structure of the Mesoamerican Biological Corridor. We will focus on mammals because this group is facing one of the highest extinction threats (¼ on 2008 Red List), mammals are a 'sentinel' group responding

early to habitat change, and Belizean mammals are both exploited by and subject to conflicts with humans. Several CITES-listed mammals will be used as indicator species, focusing on their long-term survival within Belize and the wider region (Appendix I: jaguar, puma, ocelot, tapir; Appendix II: white lipped and collared peccaries). They function as flagship species to guide us in realising an officially endorsed corridor that will implement a key link in the Mesoamerican Biological Corridor system, which is a vital requirement in maintaining biodiversity within the region (CBD Article 1: Objectives).

How does this relate to one or more of the biodiversity conventions? (150 words)
The focused monitoring of mammalian movement patterns proposed for this project accords with CBD Article 7 (Identification and Monitoring). It will put Belize as a country on track in implementing plans for the preservation of national and regional biodiversity (CBD Article 6: General Measures for Conservation and Sustainable use). The expansion of the protected area system in Belize that will result from establishing a corridor will ensure an unprecedented scale of *in situ* conservation for the country (CBD Article 8a); it will readjust levels of protection to minimize conflict with local livelihoods (Article 8b, e) and maximise efficient management of biodiversity (Article 8c), realised by enforcement of corridor protection in law (Article 8k). Through collaboration with the UoB and BFD, we will plan the corridor in partnership with local people and stakeholders so that livelihood options are created in synchrony with the regional and Mesoamerican corridor function (CBD Article 1).

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 principal project results will be disseminated by:
1. Submission to the Belizean government of a corridor zoning plan, based on objective analysis of wildlife and socio-economic indicators. From there, our intention is that the plan becomes implemented into law, and thereby disseminated to the national population at large.
2. Institutionalisation of mammal monitoring within the corridor as a defining role of the UoB Environmental Research Institute.
3. Integration of mammal monitoring within training programmes of the ERI, using the appointment of a dedicated wildlife teacher trained by Darwin personnel. See also Sect. 15.
4. A public awareness campaign on wildlife law and potential conflicts, to be run by UoB Bachelor students in Natural Resources Management.
5. Belizean scientists publish in peer-reviewed journals on tropical mammalogy and conservation.
6. Talk at one or more international conservation conferences.
7. Dedicated website.

The Darwin logo will adorn the project vehicle, and all documents and reports produced for UoB or government agencies concerning the Belize large-mammal corridor project. Conference communications will show the Darwin logo, and reports in the scientific literature will acknowledge funding by the Darwin Initiative.

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)

Principal long-term benefits to Belize:
1. Enshrining in national law of a wildlife corridor that is currently unprotected and will otherwise become severed within 5-10 years.
2. Institutionalising and equipping wildlife monitoring within training programmes of the ERI.

Post-project maintenance of the protected corridor and capacity building will be achieved by UoB and other stakeholders continuing to manage corridor functionality by (i) ongoing monitoring and mitigation against increased traffic on major roads, (ii) managing conflicts between livestock owners and wildlife along the corridor edges, (iii) promoting sustainable economic activity around the corridor.

Potential obstacles:
1. Large-scale development projects planned in the area that we are unaware of;
2. Government de-prioritises the corridor plan;
3. UoB and ERI fail to secure funding to continue the wildlife teaching post.

We have checked with the Ministry of Lands for all proposed developments. We have built strong relations with mid- and high-level government, giving us confidence that the corridor's supporters will remain in power long enough to see it into law (see supporting letters from Deputy Prime Minister and Chief Forest Officer). Biodiversity issues and mammal ecology are over-subscribed subjects at UoB, ensuring an enthusiastic market for courses in wildlife monitoring and management.

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 stable and sustainable endpoint of the Darwin project will arrive with final implementation into law of a functional corridor. We recognise that official protection must be reinforced by local acceptance and some economic benefits. The exit strategy will thus focus on achieving increased capacity within UoB to monitor corridor activity. The UoB involvement in the project will create useful media attention. All host-country partners in the project have good relations with local TV stations and two of the team members have already done television interviews on location about human-wildlife conflicts with jaguars. This format of disseminating information works very well for Belize, with the general public responding enthusiastically to such programs. With the links between all project partners already strong, these public relations exercises can become regular events. Towards the end of the project they will be deployed for further fundraising by UoB to extend the money available for mammal monitoring in the area and maintain their capacity for wildlife teaching and research. Through UoB, the Belize Livestock Association and Belize Tourism Board, we will work on increasing capacity for integrating human activity into corridor functioning, by developing eco-tourism within the region and focusing on human-wildlife mitigation projects.

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.

Assessment of training needs in relation to purpose of project:
Our work with UoB students on small jaguar projects has revealed generally low analytical skills in terms of designing data collection for hypothesis testing, understanding statistics, and capability with GIS packages. In contrast they generally have high proficiency in – and enthusiasm for – field-craft (many coming from rural backgrounds). This indicates a training need for courses in wildlife monitoring and natural resource management, which will benefit the project by focusing on mammalian population ecology.

Target groups:
Offered to students, teachers and professionals in natural resource management.

Delivery of training:
The project will appoint a dedicated mammal-monitoring coordinator to the ERI, to be trained by DI personnel in teaching wildlife monitoring and natural resources management.

Rewards in skills and knowledge:
Students will receive hands-on training in scientifically rigorous fieldwork (how to conduct fieldwork in a systematic way). This will generate data to be used for further training in GIS, and analysis of spatial movement data, under supervision of the core Darwin team. Students will also develop an awareness campaign on wildlife law and mitigating human-wildlife conflicts. Training will thereby guide them through the full process of data collection in the field, data analysis and communicating science. Training will be embedded within UoB undergraduate programmes. In turn, these programmes will provide the project with enthusiastic, deserving students for more specific monitoring in the corridor. We are currently negotiating with Panthera for the possibility of setting up Scholarships to Masters programmes outside Belize. If this is possible, than we will use the Darwin project as the focus for fieldwork, and provide extra training for deserving students.

Measurement of training effectiveness:
Formal assessment of course reports; yearly increase in numbers of Belizean students studying wildlife and human-wildlife interactions; Belizean scientists start publishing in peer-reviewed journals.

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 towards 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: • To secure connectivity for all larger land mammals within Belize, currently threatened by segregation into isolated blocks in the north and south of the country, thereby enhancing connectivity with natural areas outside Belize.	• Identified minimum conditions of habitat structure and quality for allowing free movement of medium to large mammals between existing protected areas. • Indicator species: jaguar, puma, ocelot, tapir (CITES I), white lipped and collared peccaries (CITES II, hunted), red brocket and white tailed deer, coati, armadillo and paca (unlisted reference species).	• Continued presence of target species throughout corridor areas, connecting freely with protected blocks at either end.	[redacted]
Purpose • To plan a workable natural corridor connecting the two protected wilderness blocks in north and south Belize. • To implement the plan within the legal framework of existing protected areas and zoning plans within Belize. • To establish an in-country tradition of Belizeans studying their own wildlife. • To institutionalise this impetus within the soon-to-be launched UoB Environmental Research Institute (ERI).	• Already declared interest by the Belizean government in a plan for corridor zoning, and conditions for implementation. • Submission to government of evidence-based corridor zoning plan. • Government recognition of the proposed corridor. • Integration of mammal monitoring within training programmes of the ERI.	• Continued existence and free movement of all studied taxa throughout the proposed corridor. • Corridor protection implemented into law, thereby contributing towards Belize's commitment to the CBD. • Recognition of corridor as integral to the proposed Mesoamerican Biological Corridor. • Yearly increase in numbers of Belizean students studying wildlife and human-wildlife interactions within the corridor.	• Government remains committed to the corridor (see Section 14). • No major development severs the corridor before implementation of protection. • UoB remains committed to its Environmental Research Institute.
Outputs 1. Delineation of the belt of contiguous wilderness that will constitute the corridor connecting the northern and southern protected blocks of land.	• Comprehensive corridor plan for connecting the two existing protected blocks in the north and south of the country. • Integration within this plan of	• Published report of corridor plan. • Distribution of report to government, BFD, and all local stakeholders.	• Government through BFD upholds its current agreement to divulge development plans for the area. • Continued access to private land to monitor movement and abundance of existing wildlife

	knowledge on wildlife distribution, movement and exploitation, and projected urban development either side of the corridor.		populations.
2. Implementation of corridor into law.	• Government agreement on zoning of the corridor area, following negotiations on land-use changes.	• Lawfully binding document stating specifically which areas can be used for what purpose within the designated corridor area.	• Government remains committed to the corridor and is willing to negotiate concessions against development as necessary and practical.
3. Rigorously calibrated information on movement through fragmented landscapes by neotropical mammals.	• Collection of data on density and movement of key neotropical mammal species within and through the corridor. Analysis by least-cost and other techniques to identify a corridor path with highest mobility.	• Publications in peer-reviewed journals concerning movement and dispersion through corridor areas by neotropical mammals, co-authored by Belizean collaborators on the project.	• Continued access to corridor area for fieldworkers throughout the data-collection period, and for post-project monitoring.
4. Instilling a tradition of objectively-based mammal monitoring in Belize.	• Appointment of a dedicated mammal-monitoring coordinator, and training for teaching courses in natural resource management at the ERI. • Establishment of intensive training courses in natural resource management and wildlife monitoring, including GIS, offered to students, teachers and professionals in natural resource management. • Collaboration of UoB with BFD to design an awareness campaign on wildlife law and potential conflicts, to be run by UoB students on their Bachelor programme in Natural Resources Management. • Mammal monitoring within the corridor becomes a defining role of the UoB Environmental Research Institute.	• Appointed coordinator trained in delivery of courses by Darwin core UK and Belize-based staff and consultants. • ERI teachers trained in GIS techniques and field craft. • Wildlife management training courses at the ERI outlive the Darwin project. • Belizean scientists continue publishing in peer-reviewed journals on tropical mammalogy and conservation.	• Continued commitment of the UoB to the ERI and to Belizean students in general for programmes monitoring neotropical mammals. • ERI sustains success with securing outside funding sufficient to continue the wildlife teaching appointment after the end of the Darwin project.

Activities (details in workplan)

1.1 Systematic mapping of the whole corridor zone in terms of habitat characterisations including urban parts (milestone for 1st 6 months).
1.2 Establishment of line transects and survey grids throughout the area, using a combination of a stratified design including all habitat types, and an even distribution throughout the zone. Project Leader to advise on data collection design during visits in years 1 and 2 (milestone for 1st 6 months).
1.3 Establishment of camera trap grids and locations throughout study area (milestone for 1st 6 months).
2.1 Systematic surveys for burrows of armadillos and pacas throughout the survey area in survey grids and along survey lines (reporting milestones at yearly intervals).
2.2 Systematic surveys for footprints for all species along survey lines and in survey grids (milestones at yearly intervals).
2.3 Systematic sighting surveys (distance sampling surveys) for the ungulate species and coatis (milestones at yearly intervals).
2.4 Systematic nocturnal sighting surveys for armadillos and pacas (milestones at yearly intervals).
2.5 Camera trapping for identifiable species (ocelots, jaguars) for mark-recapture analysis and capture rates for prey species (milestones at yearly intervals).
3.1 Trapping of jaguars, pumas and tapirs with the use of snares, using existing expertise in Panthera (milestones at yearly intervals).
3.2 Peccary species stalked-down wind and darted, using existing expertise in Panthera (milestones at yearly intervals).
3.3 Ocelot and coatis will be cage trapped as the safest means of trapping (milestones at yearly intervals).
3.4 Both deer species will be captured by down-wind stalking and darting, using existing expertise in Panthera (milestones at yearly intervals).
4.1 Radio tracking of all species with teams on the ground (milestones at yearly intervals).
5.1 Mammal-monitoring coordinator appointed to ERI (milestone for 1st 6 months), to coordinate the logistics of mammal monitoring and the interface between students and Darwin personnel, to be trained for teaching wildlife management by Darwin core personnel and consultants (milestones at yearly intervals).
5.2 Courses to UoB students in data collection, analysis and GIS for wildlife monitoring and natural resources management, initially run by Darwin UK and Belize-based personnel with assistance of mammal-monitoring coordinator; in final year run by coordinator now trained for teaching (milestones at yearly intervals).
5.3 Implementation of UoB projects to assist with end parts of activities 1, all of activities 2 and activities 4. Some responsible students will assist with activities 3 but this will always be done under expert guidance (milestones at yearly intervals).
5.4 Writing up of undergraduate projects and potentially master projects (milestones at yearly intervals).
5.5 Analyses of mammal-monitoring data from cameras and telemetry for least-cost optimal corridor path (milestones in years 2 and 3).
6.1 Study of potential conflicts with wildlife at corridor edges, through the Forestry Department and the Agriculture Department (milestones at yearly intervals).
6.2 Mapping hunting and forest extraction and studying the socioeconomic implications of this for corridor design (milestones at yearly intervals).
6.3 Mapping the potential and willingness by the local community to partially convert to ecotourism and explore possibilities through the Belize Tourism Board. (milestones in years 2 and 3, and final output).
7.1 Reports for the government as an input for discussion on corridor (final output).
7.2 Discussion and negotiation with government about corridor implementation (milestone in year 3).
7.3 Signing of official agreements (final output).
8.1. Writing of peer reviewed papers (final output).

Monitoring activities:

Indicator 1 Fulfilling all sample size assumption necessary to run models to create habitat maps, estimate abundance from camera trapping and surveys.
Indicator 2 Get adequate numbers of sign, sightings and photo captures to calculate abundance.
Indicator 3 Capture high enough numbers of individuals from each species based on expectation from indicator 2.
Indicator 4 Get a high enough sample size of accurate fixes from each tagged individual and each species. Accuracy of trackers will be tested with fixed known collars.
Indicator 5 Adequate functioning of coordinator, as an organiser, teacher/assistant, practical work, quality of work and understanding by students within the program.
Indicator 6 High cooperation from stakeholder communities.
Indicator 7 Implementation of corridor according to minimum requirements as discovered through the project.
Indicator 8 Acceptance of papers in well established peer reviewed papers.

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	Mapping of corridor area	4	X	X										
1.2	Establishment of line transects and survey grids	3	X	X										
1.3	Establishment of camera trap grids	3	X	X										
2.1	Systematic surveys of burrows for Paca and Armadillo	6			X	X		X	X		X	X		
2.2	Systematic surveys for footprints of all species	6			X	X		X	X		X	X		
2.3	Systematic sighting surveys for all ungulates and coatis	6			X	X		X	X		X	X		
2.4	Systematic night time sighting surveys for pacas and armadillos	6			X	X		X	X		X	X		
2.5	Camera trap surveys	8			X	X		X	X		X	X		
3.1	Trapping of jaguars, pumas and tapirs	4-6			X		X		X		X			
3.2	Trapping of peccaries	4-6				X		X		X		X		
3.3	Trapping of ocelot and coatis	4-6			X		X		X		X			
3.4	Trapping of both deer species	4-6				X		X		X		X		
3.5	Trapping of armadillos and pacas	4			X		X		X		X			
4.1	Radio tracking of all collared species	25			X	X	X	X	X	X	X	X	X	X
5.1	Mammal-monitoring coordinator appointed to ERI and trained for teaching	30	X	X	X	X	X	X	X	X	X	X		
5.2	Course work to UoB students	5		X			X				X			
5.3	Field projects to UoB students	8			X	X			X	X			X	X
5.4	Marking and assisting with reporting stage	3				X				X				X
5.5	Analyses of mammal-monitoring data for optimal corridor path (least-cost analyses)						X	X	X	X	X	X		
6.1	Study of Human-wildlife Conflict at edges of study area	6				X		X		X		X		
6.2	Study extraction and hunting levels within the study area	5					X		X		X			
6.3	Study potential for tourism for surrounding stakeholder communities	6				X		X		X		X		
7.1	Reports to government	7				X				X		X	X	
7.2	Workshop negotiations with government	5				X				X			X	X
7.3	Signing of official agreements with government concerning corridor	1												X
8.1	Writing and submitting peer reviewed papers	4								X				X

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)	40
4A	Number of undergraduate students to receive training	40
4B	Number of training weeks to be provided	
4C	Number of postgraduate students to receive training	2-4
4D	Number of training weeks to be provided	55
5	Number of people to receive at least one year of training (which does not fall into categories 1-4 above)	2-4
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	4
8	Number of weeks to be spent by UK project staff on project work in the host country	9
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	3
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording	1
11A	Number of papers to be published in peer reviewed journals	3+
11B	Number of papers to be submitted to peer reviewed journals	4-8
12A	Number of computer based databases to be **established** and handed over to host country	3
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)	1
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	3
14B	Number of conferences/seminars/ workshops **attended** at which findings from Darwin project work will be presented/ disseminated.	3
15A	Number of national press releases in host country(ies)	5
15B	Number of local press releases in host country(ies)	5
15C	Number of national press releases in UK	1
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**	1
18A	Number of national TV programmes/features in host country(ies)	3-5
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)	5
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 Belize	£35,526
21	Number of permanent educational/training/research facilities or organisations to be established and then continued after Darwin funding has ceased	1
22	Number of permanent field plots to be established during the project and continued after Darwin funding has ceased	60
23	Value of resources raised from other sources (ie in addition to Darwin funding) for project work **– confirmed funding**	£155,107

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.

Year 1

(a) The indicators will be the initiation of baseline data recording on all of the focal species, and the appointment of a mammal-monitoring coordinator to the ERI.

(b) We have already established approximate abundance levels of all indicator species. We also have some initial information on their movement patterns throughout the corridor zone, into and out of the protected areas and traversing the principal road.

(c) The year-1 baseline data will be collected with students from UoB on the training courses in wildlife monitoring. These will be run by Darwin core staff as part of the training of the coordinator towards autonomy in taking wildlife field courses. The Darwin core team combines wide expertise in programs for data analysis, including GIS, MARK and RAMAS, and methods of distance sampling, and statistical analysis (e.g., see references in Project Leader CV by Harmsen et al. 2009, Guichón & Doncaster 2008, Doncaster & Davey 2007).

(d) The students will be involved in camera trapping, capture of target mammal species and fitting with radio collars (under expert guidance of Panthera staff) and subsequent monitoring of individual movement behaviours by radio-telemetry. Pilot projects have already been run with students to assess logistical viability.

(e) The initial indicators of success on baseline data will come from establishing confidence intervals for the robustness of the abundance estimates and movement rates, and from sample sizes for data on mammal movements. Coursework by the students will be evaluated on comprehension by students of subjects learned and on report- writing for projects. Progress on corridor function will be discussed continuously with the BFD as one of our partners; an official interim report will be presented to BFD and the Ministry of Natural Resources, and an initial workshop with them will discuss potential designs of corridors.

Year 2

(a) The project will define indicators of ecosystem health throughout the potential corridor region, in terms of fluidity of movement patterns through more or less contiguous habitat.

(b) We will explore the potential to make use of newly developed techniques for “least-cost” analysis (as described in Diezena et al. 2007, cited in CV of Project Leader Doncaster). Such analyses aid in locating the optimal corridor path for wildlife in terms of the habitat belt with the lowest friction for animal movement.

(c) Baseline data from year 1 will then be integrated with data on land-use and potential conflicts with stakeholders, and their extraction needs. Draft implementation plans for a corridor will be discussed at workshops with stakeholder agencies: tourism issues with the Belize Tourism Board, agricultural and wildlife issues with the Forest and Agricultural Departments).

(d) The training course will be adjusted according to critiques from year 1, and evaluated again on the same criteria. BFD and government reporting will now be done every half year since the incoming data will be re-evaluated against the proposed corridor plans in the first year.

Year 3 and beyond

(a) The completion of data collection from camera traps and radio-transmitters on mammals.

(b) We will prepare final recommendations to government for the regulation of development within and around the proposed corridor, which will be negotiated with the government and BFD.

(c) Final success at the end of the lifetime of the project will be marked by submission of the report, and its conclusion will come with implementation of an official corridor by the Belize government in accordance with our advice. Although we anticipate allowing sufficient time after initial negotiations, further negotiations will follow if government needs more time. The Darwin team will be available to accommodate these negotiations beyond the set time of the project if necessary.

(d) The effectiveness of the corridor will be judged in future years against ongoing monitoring. The last year will therefore be judged additionally on the plans for continuation and development of

the wildlife training programs established within UoB beyond the end of Darwin funding. At this stage the mammal-monitoring coordinator will have been fully trained for teaching undergraduate courses, and we anticipate will be taking charge of ~300 hours per year of contact time with students in the classroom plus 300 hours per year in fieldwork monitoring with UoB students.

(e) Achievement of the goal to instil a tradition of mammal monitoring in Belize will be evaluated against the capacity for UoB to maintain (*i*) the capital equipment handed over at the end of the project for mammal monitoring run through undergraduate courses in natural resources management, and (*ii*) the high standard of scientific rigour instilled within the 3 years with the Darwin project.

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 School of Biological Sciences of the University of Southampton is funded by the UK Higher Education Funding Council and by Full Economic Costing on Research Grant Applications.

Panthera is a 501(c)(3) public charity, founded in 2006. It devotes more resources to cat conservation than any other NGO. Panthera guarantees all its core operating and salary costs, so no overhead is taken from charitable donations.

University of Belize is the country's national university, an autonomous institution committed to excellence in higher education, research and service for national development. It is a statutory body funded by government and through donations.

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 Belize will pay for:
- Salary of Elma Kay for 2.5 years at 8% on the project;
- Access for students to computers, lecture theatres, labs, teaching assistants, bus for large-scale field visits.

Panthera will pay for:
- Salary of Bart Harmsen for 2 years at 100% on the project and final year at 50%;
- Contributions to fieldwork travel (vehicle fuel and maintenance, boat rental);
- Consumables for fieldwork (batteries for camera traps, snares, drugs for trapping mammals);
- Capital equipment for fieldwork (two off-road vehicles, GPS units, radio collars, receivers, flight antennae for locating animals, snare equipment, camera traps, darting equipment, camping equipment, computers, etc).

Belize Forest Department will pay for:
- Salary of George Hansen for 2 years at 35% on the project and final year at 17%.

University of Southampton will pay for:
- Salary of Project Leader Patrick Doncaster for 3yrs at 3% on the project (~60% of time on the

project that is not spent in Belize on once-yearly visits) and final 4 mths at 6% (i.e., all of time spent on the project in the 4th year);
- Overheads on the above salary contributions;
- Electronic access to university library resources for Belizean students.

Unconfirmed:

UoB will be applying for funding from Protected Area Conservation Trust to sustain monitoring and teaching post, as post-project legacy. This is Belizean money that has to go through Belizean organisations.

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:

Separate application from Peoples' Trust for Endangered Species in the pipeline for GPS collars on jaguars. Not necessary to the project but informative.

Funding in kind:

Panthera funds attendance at international conservation conferences and workshops for Bart Harmsen, who will disseminate information on the Darwin project.

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) X ☐ **Yes, advice attached** ☐ **No** ☐

CERTIFICATION 2009/10

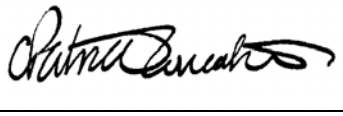
On behalf of the Trustees of the University of Southampton

I apply for a grant of £173,989 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)	C. PATRICK DONCASTER
Position in the organisation	Reader in Ecology

Signed  **Date:** 25 March 2009

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? An electronic link to a website is acceptable.	✓
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.**