



21 12-021

**DARWIN INITIATIVE**

**APPLICATION FOR GRANT FOR ROUND 11 COMPETITION: STAGE 2**

Please read the Guidance Notes before completing this form. Give a full answer to each section; applications will be considered on the basis of information submitted on this form. Please do not cross-refer to information in separate documents except where invited on the form. The space provided indicates the level of detail required but you may provide additional information on a separate A4 sheet if necessary. Do not reduce the font size below 10pt or the paragraph spacing.

**Submit by 13 January 2003**

**1. Name and address of organisation**

**Centre for Marine Biodiversity and Biotechnology**

**2. Project title (not exceeding 10 words)**

**Marine biodiversity assessment and development in Perlas Archipelago, Panama**

**3. Principals in project. Please provide a one page CV for each of these named individuals.**

Details	Project leader	Other UK personnel (if working more than 50% of their time on project)	Main project partner or co-ordinator in host country
<b>Surname</b>	Mair		Guzman
<b>Forename(s)</b>	James		Hector
<b>Post held</b>	Lecturer		Staff Scientist
<b>institution (if different to above)</b>			Smithsonian Tropical Research Institute, Panama
<b>Department</b>	School of Life Sciences		Naos Marine Laboratory
<b>Telephone</b>			Division
<b>fax</b>			
<b>Email</b>			

**4. Describe briefly the aims, activities and achievements of your organisation. (Large institutions please note that this should describe your unit or department)**

**Aims** The Centre for Marine Biodiversity and Biotechnology (CMBB) was established in 1999 within the University's School of Life Sciences ([www.sls.hw.ac.uk](http://www.sls.hw.ac.uk)). Its prime aim ([www.bio.hw.ac.uk/cmbb/main.htm](http://www.bio.hw.ac.uk/cmbb/main.htm)) is to promote the study of marine biodiversity by providing a centre of taxonomic excellence that focusses on the study of the state of the marine environment and conservation issues.

**Activities** CMBB current research programmes include: long-term studies on the benthic communities of the Firth of Forth; genetics of fish parasites; speciation in bivalve molluscs using molecular genetics; biotope mapping and benthic community studies for conservation management purposes. Postgraduate training (40+ UK and overseas students per year) is also a major activity.

**Achievements** Staff in CMBB are internationally recognised for research work on benthic system impacts and marine conservation studies. The School runs long-established undergraduate (30 years) and postgraduate (16 years) courses in applied aspects of Marine Resources. The postgraduate MSc course has been in receipt of annual NERC quota studentships since 1989 ([www.bio.hw.ac.uk/courses/MSc\\_Marine\\_Resource\\_Development.htm](http://www.bio.hw.ac.uk/courses/MSc_Marine_Resource_Development.htm)).

**10. Is this a new initiative or a development of existing work (funded through any source)?**

New Initiative

**11. How will the project assist the host country in its implementation of the Convention on Biological Diversity? Please make reference to the relevant article(s) of the CBD, thematic programmes and/or cross-cutting themes. Is any liaison proposed with the CBD national focal point in the host country? Further information about the CBD can be found on the Darwin website or CBD website.**

Las Perlas is included within the humid forest eco-region of the Chocó-Darién, which is considered as one of the eco-regions with the highest diversity of species in the neotropics. Its biological importance, state of conservation, and current and potential threats place it as one of the sites in the Latin American Pacific with the highest priority for conservation initiatives.

Staff in the Smithsonian Tropical Research Institute work closely with personnel in the Panamanian government's Environmental Authority and CBD national focal point - ANAM (<http://www.anam.gob.pa/portada.htm>) and assist in advising on policy, monitoring, assessment and scientific research within the system of the country's protected areas. The combination and collaboration of UK and Panamanian expertise on this proposed Darwin Initiative project should therefore ensure that the implementation of several aspects of the Convention on Biological Diversity would be assisted, mainly (and in proportional order): Articles 12 (research and training); 7 (identification and monitoring); 6 (measures for conservation); 18 (technical and scientific co-operation); 17 (exchange of information); and 13 (public education/awareness). The project would be relevant to the CBD thematic programme on 'marine and coastal biological diversity'. Liaison with ANAM would be maintained during and after the project to support designation, assessment and monitoring of the new protected area.

**12. How does the work meet a clearly identifiable biodiversity need or priority within the host country?**

In 1972, a study carried out by the United Nations' Food and Agriculture Organization concluded that Las Perlas should be included in the protected area system of Panama because of its importance in the production of food. Later on, the National Plan for Protected Areas and Biological Corridors proposed the protection of Las Perlas through a legal basis, under the designation "Las Perlas National Park". However, due to the paucity of specific studies in the archipelago some basic information is lacking and the park still has not yet been designated. The presence of productive activities (forestry and fishing) in the area is causing a considerable pressure on the local natural resources. The creation of hotels and other facilities as well as the presence of increasing tourist numbers could cause a significant impact on the site, especially the coral reefs around the Archipelago. The regulation of the economic activities combined with the protection of the natural resources of Las Perlas Archipelago is today seen as a priority for the Republic of Panama.

**13. If relevant, please explain how the work will contribute to sustainable livelihoods in the host country**

The Archipelago is located within the main fishery area of the country: the Gulf of Panama. In 1990, it was estimated that about 10,000 people worked in the fishing activity, of which about 65% were subsistence fishers. The mangrove forests along the mouths of rivers in some of the islands constitute important reproduction sites for aquatic species as well as a source of food for fish and shrimp larvae of commercial interest. A greater understanding of the marine ecosystem in this area, resulting from this proposed study, and proper protective management within a Park system, as proposed, would contribute to sustainable livelihoods of this community. The work would be multidisciplinary in nature, would assist in making use of scientific findings in policy making, would take into account land and marine usage (agriculture, fishing, tourism, etc.) in the Archipelago and would consider both conservation and sustainable development issues – i.e. a full ecosystem approach is envisaged.

**14. What will be the impact of the work, and how will this be achieved? Please include details of how the project outputs will be disseminated and put into effect to achieve this impact.**

The main impact would be a comprehensive mapping study and assessment of the marine habitats in the Perlas Archipelago that would provide the necessary baseline information for appropriate management procedures to be implemented. Enhanced capacity for the country would be achieved in that three Darwin Fellows would receive academic qualifications and practical training in this study during which they would gain intimate knowledge of the environment and, with guidance, would be able to contribute to the terms of reference for the development of the Park. Many of the outputs would be demonstrated in the later phase of the project through production of: action plans; field plots; field guide/manual (for specific use in the designated Park); and educational leaflets; web pages; peer-reviewed papers; the Darwin conference (for a wider audience). Information would be disseminated not only directly to the national policy makers (ANAM) but also more formally to the wider scientific/conservation management community. Project outputs and research directions would also be disseminated, and under continuous review, through the proposed Darwin Network. This exchange of information and experience should be mutually beneficial and may not only influence other ongoing and future projects, but also would certainly benefit the proposed project by enabling the project team to consider the local work in relation to experiences and developments on a more regional basis.

**15. How will the work leave a lasting legacy in the host country or region?**

The project would produce a comprehensive biological and geographical information base on the marine habitats and the ecosystem around Las Perlas on which to base future work, monitoring and impact assessment studies. Satellite imagery that is planned to be obtained for mapping of the littoral and shallow sublittoral in this project would provide a datum for future monitoring and detection of changes and would be available also for use in the study of the terrestrial environment of the islands. Trained and project-experienced Darwin Fellows would provide an important legacy for future work, and ultimately the assistance in the establishment of a new National Park in Panama would be a truly durable legacy of the project.

**16. What steps have been taken to identify and address potential problems in achieving impact or legacy?**

The proposed UK project leader and host country co-ordinator met in Panama (August 2002) to fully discuss and develop the concept and requirements of the work. Relevant experience on such projects on both sides should ensure that this proposed project proceeds with minimum problems that might be anticipated. Careful selection of the Darwin Fellows to be trained is seen as crucial, as is the maintenance of continuous liaison with the CBD national focal point to achieve full impact.

**17. How will the work be distinctive and innovative? How will the project be advertised as a Darwin project and in what ways would the Darwin name and logo be used?**

Historically, archipelagos (e.g. Galapagos) are inextricably linked with the formation in Charles Darwin's mind of his theory of natural selection and the origin of species. Therefore, a better understanding of the lesser-studied marine invertebrate fauna in another Pacific archipelago could be considered as an entirely appropriate "Darwin" project. Following the Darwin Initiative principles, the proposed project's aims would be to build up an active unit within Panama which would develop local expertise in the taxonomy of these lesser-studied marine invertebrates and in the understanding of their importance in constituting productive ecosystems. The unit would continue to be called the Darwin Initiative Unit after project completion and it is expected that its work would become widely recognised, nationally and internationally. Additionally, the project would aim to raise awareness of the issues by producing project-related educational material directed at Panamanian school children and the local inhabitants of Las Perlas Archipelago. A stated objective is to facilitate the formation of a "Darwin" network of previous and current Darwin Initiative projects and their workers so that experience and information could be exchanged where relevant to the benefit of all concerned. Amongst the main projects to be linked initially would be: 162/06/029; 162/07/147; 162/06/174; 162/10/023. Others expressing interest include: 162/07/104; 162/05/128; 162/11/017. In the proposed new project Darwin Fellows, technical assistants and student volunteers from local Universities would receive 'Darwin' training certificates with the name of the proposed project and the Darwin logo. Training leaflets and reports produced by the Unit and project correspondence would also include the Darwin logo and all published work would acknowledge the main funding source.

**18. Are you aware of any other individuals/organisations carrying out similar work? Are there completed or existing Darwin Initiative projects which are relevant to your work? Please give details, explaining the similarities and differences. Show how the outputs and outcomes of this work will be additional to any similar work, and what attempts have been/will be made to co-operate with such work for mutual benefits.**

Very little work, and certainly no habitat mapping, is known from Las Perlas Archipelago despite its strategic importance. In Panama, studies have been carried out (mainly by STRI staff) on other marine National Park areas, such as Isla Coiba (Pacific) and Isla de Bastimentos (Caribbean). The UK project leader was in charge of two previous Darwin projects that were very relevant to this new proposed project. Project 06/029 consisted mainly of capacity training and the study of Ecuadorian coastal marine invertebrates. Project 07/147, with CORALINA, focussed on habitat mapping around the Colombian Caribbean Archipelago of San Andres (which was in 2001 designated as a UNESCO MAB Biosphere Reserve - "Sunflower"). During the August visit to Panama (and Ecuador), and subsequently by email, the UK project leader was able to discuss with these and other relevant South American project personnel the establishment of an information and experience exchange network of Darwin projects. This co-operation would undoubtedly assist the work on Las Perlas Archipelago, e.g. CORALINA has much experience in producing highly useful educational material for local use and this should prove helpful for such work in Panama.

**19. Will the project include training and development? Please indicate who the trainees will be and criteria for selection. How many will be involved, and from which countries? How will you measure the effectiveness of the training and will those trained then be able to train others? Where appropriate give the length and dates (if known) of any training course. How will trainee outcomes be monitored after the end of the training?**

The main training and development component would be aimed at three Darwin Fellows who would be graduates carefully selected from local/regional Universities with experience or aptitude for research and project work. The plan would be to select Fellows who could specialise in different components of the work (e.g. taxonomy, habitat classification, GIS and conservation management principles, etc.). Each would receive postgraduate training to MSc level (see Section 21 for timetable) and other specialist course training, some of which would be able to be passed onto colleagues in Panama. The Fellows to be trained would be an integral part of the Darwin project team and so training outcomes would be closely monitored. Specialist short course training to be given in Panama by UK team members Dr Jimmy Young and Ms Susan Chambers (on remote sensing/GIS and taxonomy/museum curatorial procedures) would be open to other personnel as appropriate as well as the Darwin team.

**20. How are the benefits and/or work of the project expected to continue after the end of grant period? Please provide a clear exit strategy.**

The major input of training and field assistance provided by Heriot-Watt University staff would take place in Years 1 and 2 of the project. Survey and data analysis would continue in-situ in Las Perlas in Year 3 by which time it is expected that the initial work would have identified important representative sites from the habitats mapped during the project. These sites would be identified as stations where subsequent and continued monitoring should take place as part of the strategy for conservation and resource management of the Archipelago/Park (long-term responsibilities of ANAM). The continued monitoring at these key sites would, it is expected, be funded through statutory national and international project funds and would logically involve those researchers (e.g. the Darwin Fellows) who had by then detailed knowledge and experience of the area. Specialist training of the three Darwin Fellows, whilst in Edinburgh on MSc courses, would also include intensive workshops in molecular taxonomy (run regularly by CMBB) and work experience in marine invertebrate curatorial techniques at the National Museums of Scotland, Edinburgh. An MSc optional module on 'Remote Sensing and GIS' would be strongly recommended for the Fellows - the other option, depending on interests, could be 'Diving Science'. STRI has major facilities, especially in a building dedicated to molecular genetics work, and GIS expertise which would enable the training provided in Edinburgh, and during the project, to be more fully developed and taken advantage of subsequently by the Darwin Fellows. Efforts would be made to maintain and further develop collaborative links between Heriot-Watt University and STRI during and after the project to enable continued joint research and training activities (e.g. applications to EU Framework 6 INCO programmes, etc.). Externally funded support for continued project work would be actively sought throughout the project. STRI has a proven record in obtaining such funding.

**21. Provide a project implementation timetable that shows the key milestones in project activities.**

Project implementation timetable	
Date	Key milestones
<u>YEAR 1</u>	
April 2003	Set up and sign memorandum of understanding.
April-June 2003	Select and appoint Darwin Fellow 1 to join the team. Finalise planning and survey arrangements for initial survey around the Archipelago. Gather further relevant background information on area. UK and Panamanian personnel start analysis on purchased satellite imagery. STRI staff liaise in detail with ANAM authorities. Initiate formal network of Darwin projects for information and experience exchange.
July-August 2003	UK project leader and PhD student travel to Panama in July to participate in initial 14-day field work survey with STRI personnel and further project co-ordination.
September 2003	Darwin Fellow 1 travels to Edinburgh to start MSc course.
September 2003 -June 2004	Work-up, analysis and reporting of survey findings. Further small scale field surveys take place based on findings of main survey. Design plans for Year 2 and 3 sampling programmes.
March 2004	Select and appoint Darwin Fellow 2 to join team in April.
<u>YEAR 2</u>	
May 2004	Darwin Fellow 1, after completing taught component of MSc course and additional training, returns to Panama to work on Darwin project results and towards completing the MSc dissertation.
July-August 2004	Three UK staff and PhD student travel to Panama to provide training courses to Darwin Fellows and other personnel on applications of remote sensing, GIS, taxonomy and curatorial techniques. Project Leader and PhD student participate in 5-day survey of study area with STRI personnel and Darwin Fellows.
September 2004	Darwin Fellow 2 travels to Edinburgh to start MSc course in October.
September 2004 -June 2005	Design of educational leaflets starts. Work-up, analysis and reporting of survey findings continues. Further small scale field surveys take place. Darwin Fellow 1 graduates with MSc degree.
March 2005	Select and appoint Darwin Fellow 3 to join team in April.
<u>YEAR 3</u>	
May 2005	Darwin Fellow 2, after completing taught component of MSc course and additional training, returns to Panama to work on Darwin project results and towards completing the MSc dissertation.
July-August 2005	UK project leader and PhD student travel to Panama to participate in final 5-day survey of study area with STRI personnel and Darwin Fellows. Project Conference in Panama takes place with presentation of results and management plan proposals in liaison with ANAM. Consolidation of establishment of field plots, data bases, reference collections, web page information, etc. Production of educational leaflets and a field guide/manual ready for distribution. Discussions and negotiations on plan for future follow-up research.
September 2005	Darwin Fellow 3 travels to Edinburgh to start MSc course in October.
September 2005 -June 2006	Darwin Fellow 2 graduates with MSc degree. Work-up, analysis and reporting of survey findings continues and concludes. Dissemination of results (continuation of journal paper productions) and final reporting.
April 2006	Darwin Fellow 3, after completing taught component of MSc course and additional training, returns to Panama to work on Darwin project results and towards completing the MSc dissertation.
November 2006	Darwin Fellow 3 graduates with MSc degree.

**22. How will the most significant outputs contribute towards achieving the purpose of the project? (This should be summarised in the Log Frame as Indicators at Purpose level)**

Postgraduate and specialist training of three carefully selected Darwin Fellows, forming the core of the Darwin team but under the guidance of experienced scientists, should ensure that the project obtains comprehensive scientific information of the study area to enable appropriate action plans to be formulated for protected area management purposes. Results would be disseminated first to the national policy makers (ANAM) and more widely through scientific papers, conferences and other means. The output of establishing an active 'information and exchange' network would help draw on experience from other similar and related projects to assist in the achievements of this project's proposed objectives.

**23. Set out the project's measurable outputs using the attached list of output measures**

<b>PROJECT OUTPUTS</b>		
<b>Year/Month (starting April)</b>	<b>Standard Output Number (see standard output list)</b>	<b>Description (include numbers of people involved, publications produced, days/weeks etc)</b>
Years 1, 2 & 3+ /Oct. – Sept.	2	Three Darwin Fellows trained to MSc level – total 156 weeks
Year 2/July	4c, 4d, 6a, 6b	Other Panamanian students/personnel to receive training in Panama – 10 days formal training by UK staff plus additional work experience
Year 3/August	7	Information leaflets produced (see Section 8 for details)
Years 1, 2 & 3 /July-August	8	Project leader – total 12 weeks, Dr Jimmy Young & Ms Susan Chambers – 3 weeks each (Year 2 only), Ms Sarah Benfield (PhD student) – total 21 weeks for additional research collaboration
Year 3/August	9	One Action Plan to be produced and submitted to ANAM
Year 3/August	10	One field guide/manual produced
Year 2 onwards	11a, 11b	At least six papers submitted and published in peer reviewed journals
Year 3/August	12b	One computer database enhanced
Year 3/August	13b	One reference collection enhanced
Year 3/August	14a, 14b	One Darwin Conference in Panama organised in Year 3 and at least two others expected to be attended over project life
Year 1/May onwards	17a, 17b	One Darwin-specific dissemination network to be established and others, as appropriate, enhanced
Year 3/March	20	£4,500 – Satellite imagery
Year 3/August	22	At least six field plots established for future monitoring purposes
Years 1-3	23	Substantial additional funding resources will be raised – STRI/HWU, etc (see Section 31 for further details) – current total £167,116
Years 1-3	15, 16, 18, 19	News of Darwin project work to be broadcast on radio and TV, newsletters and press releases will be attempted and encouraged as appropriate

## MONITORING AND EVALUATION

- 24. Describe how the progress of the project, including towards delivery of outputs, will be monitored and evaluated in terms of achieving its overall purpose. This should be both during the lifetime of the project and at its conclusion. Please make reference to the indicators described in the Logistical Framework.**

Both the UK project leader and host country project co-ordinator for this proposal have experience in managing similar projects. They intend to liaise closely and regularly to ensure that all aspects of the project are kept under evaluation and monitoring. Yearly face-to-face meetings would assist in detailed project evaluation and development of an appropriate exit strategy. Postgraduate training outputs would be evaluated by normal Examination Board procedures at Heriot-Watt University. Progress on identification and production of monitoring site plots and action plans would be assessed through consultations with ANAM. The principal project investigators would keep under continuous review the appropriate times and places for result dissemination (e.g. conferences, papers, etc.) and the participation level of the proposed information exchange network.

- 25. How will host country partners be involved in monitoring and evaluation of the project?**

STRI personnel have much experience both in running large projects and in liaison with relevant national and international bodies responsible for progress of the CBD (see STRI website – www.stri.org). The host country co-ordinator already has some reef monitoring areas in Las Perlas and is currently involved in preliminary research there. In most respects, the UK project leader would be relying on STRI to have the major role in the on-site monitoring and evaluation of progress of the scientific aspect of the project within Panama as well as monitoring day-to-day management.

- 26. How will you ensure that the project achieves value for money?**

Value for money with respect to the Darwin contribution would be achieved since the Smithsonian Tropical Research Institute in Panama is prepared to provide substantial in-kind donations towards this ambitious project. This would take the form of covering the proportional salary costs of the host project co-ordinator (Dr Hector Guzman) and his research assistant (Biol. Carlos Guevara). STRI would also provide their research vessel and associated survey equipment at substantially subsidised rates. Laboratory facilities and space for the Darwin Unit, Darwin Fellows and visiting scientists would also be heavily subsidised and therefore of minimal cost to the Darwin funding of the proposed project. Heriot-Watt University would subsidise approximately 50% of the overseas fees for the MSc training. The HWU PhD student (Ms Sarah Benfield), who it is proposed would work within the project, already has full studentship funding for her studies. Plans are for her to include, in any case, marine habitats of the Perlas Archipelago as a short case study for her thesis. If the Darwin Initiative proposal was to be approved then the Perlas Archipelago would become the main focus for the development of her thesis and research. She is fully funded by an EPSRC grant (2002-2005) and is supervised jointly in Heriot-Watt University by Dr James Mair and Dr Jimmy Young with Dr Hector Guzman acting as external supervisor for work in Panama. It is probable that some other individually-funded UK MSc students may be able to contribute to the Darwin project work through short MSc dissertation research studies. Additional assistance from Panamanian students for work experience will be encouraged. The British Embassy in Panama has provided local company contacts and negotiations are currently being held with several companies with regards to matching funding/sponsorship support for the production and publication of educational material and conference sponsorship, etc. Further attempts to obtain more matching funding will continue. At present £167,116 matching funding is confirmed.

- 27. Reporting Requirements. All projects must submit six monthly reports (by 31 October each year) and annual reports (by 30 April each year). Please check the box for all reports that you will be submitting, dependent on the term of your project. You must ensure that you cover the full term of your project.**

Report type	Period covered	Due date	REQUIRED?
Six month report	1 April 2003 – 30 September 2003	31 October 2003	Yes
Annual report	1 April 2003 – 31 March 2004	30 April 2004	Yes
Six month report	1 April 2004 – 30 September 2004	31 October 2004	Yes
Annual report	1 April 2004 – 31 March 2005	30 April 2005	Yes
Six month report	1 April 2005 – 30 September 2005	31 October 2005	Yes
Final report	1 April 2003 – 31 March 2006	30 June 2006	Yes

## LOGICAL FRAMEWORK

28. Please enter the details of your project onto the matrix using the note at Annex B of the Guidance Note. This should not have substantially changed from the Logical Framework submitted with your Stage 1 application. Please highlight any changes.

Project summary	Measurable indicators	Means of verification	Important assumptions
<b>Goal:</b> To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve <ul style="list-style-type: none"> <li>the conservation of biological diversity,</li> <li>the sustainable use of its components, and</li> <li>the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</li> </ul>			
<b>Purpose</b> To build up research expertise in a team dedicated to obtaining habitat information and to producing management plans for the marine and coastal environment of Las Perlas in the Gulf of Panama in order to enable the designation of a Marine National Park within the Archipelago's boundaries	Information obtained during surveying and research from project used in formulation of action plans for protected area management during discussions with ANAM (Panamanian National Environmental Authority)	ANAM endorsement of final reports produced by Darwin project team	Panamanian authorities accept the information obtained and advice/recommendations made during the project and pass appropriate legislation, policy and funding schemes to set up and manage the Park
<b>Outputs</b> 3 Panamanian Darwin Fellows with MSc level degrees and experience in applied field research  Field plots and action plans produced  Results disseminated through conference, scientific papers and other means  Information and experience exchange network of Darwin workers established	Continuous assessment and marks obtained during taught modules and research dissertation  Plot sites geographically defined and Action Plan draft report presented  Papers being peer-reviewed, Conference arrangements and attendance confirmed  Numbers of groups participating and numbers of communications	Degree certificates awarded by Heriot-Watt University  Feedback and final Action Plan report endorsed  Scientific papers appearing in journals  Network aims and details of active partners appear on websites	Darwin Fellows pass all academic requirements of HWU's MSc Course  ANAM agrees on proposed Action Plan  Manuscripts submitted to peer-reviewed journals are accepted  Other partners maintain commitment to Network
<b>Activities</b> Provision of training  Survey and habitat mapping  Results dissemination and consultations  Production of educational material  Networking	<b>Activity Milestones (Summary of Project Implementation Timetable)</b> In each of the 3 Years, one Darwin Fellow selected in April, starts MSc taught course training in UK in October and completes degree with dissertation in Panama by following September. Main UK staff-run training courses held in Panama in July/August 2004.  Survey programme planning finalised by June 2003. Main field survey work carried out in July/August of each year jointly by UK and Panamanian team with additional small-boat/shore survey work carried out locally throughout study period. Field plots, databases and reference collections consolidated by August 2005.  Peer-reviewed scientific journal papers starting to be prepared after collation of initial survey results and being produced regularly in Years 2, 3 and afterwards. Project Conference held August 2005. Continuous discussions/liaison with ANAM personnel.  Design of school and community education leaflets started September 2004 and printed ready for distribution in August 2005.  Immediate "information and experience exchange" network initiated (May 2003) with core of other Darwin project personnel. Expanded throughout project.		

## FINANCIAL ASPECTS

29. Please state costs by financial year (April to March). Use current prices - do not include any allowance for assumed future inflation. For programmes of less than 3 years' duration, enter 'nil' as appropriate for future years. Show Darwin funded items separately from those funded from other sources.

**Table A: Staff time.** List each member of the team, their role in the project rate and the percentage of time each would spend on the project each year.

	2002/2003 %	2003/2004 %	2004/2005 %
<b>United Kingdom project team members and role</b>			
Dr James Mair (Project Leader - Heriot-Watt University)	15	15	15
Dr James Young (Remote Sensing and GIS Expert - HWU)	5	10	5
Ms Susan Chambers (Taxonomist and Curator - Royal Scottish Museum)	5	10	5
Ms Sarah Benfield (PhD Researcher - HWU)	50	100	50
<b>Host country/ies project team members and role</b>			
Dr Hector Guzman (Project Co-ordinator - STRI)	30	30	25
Biol. Carlos Guevara (STRI Research Assistant, Marine ecologist)	40	40	40
Darwin Initiative Fellow 1 - STRI (to be selected and appointed)	100	100	100
Darwin Initiative Fellow 2 - STRI (to be selected and appointed)		100	100
Darwin Initiative Fellow 3 - STRI (to be selected and appointed)			100

**Table B: Salary costs.** List the project team members and show their salary costs for the project, separating those costs to be funded by the Darwin Initiative from those to be funded from other sources.

Project team member	2003/2004	2004/2005	2005/2006
	£	£	£
Dr James Mair			
Dr James Young			
Ms Susan Chambers			
Ms Sarah Benfield			
Dr Hector Guzman			
Biol. Carlos Guevara			
Darwin Initiative Fellow 1			
Darwin Initiative Fellow 2			
Darwin Initiative Fellow 3			
<b>TOTAL COST OF SALARIES</b>			



**Table C. Total costs. Please separate Darwin funding from other funding sources for every budget line.**

	2003/2004	2004/2005	2005/2006	TOTAL
<b>Rents, rates, heating, lighting, cleaning, overheads</b>				
• Darwin funding				
• other funding				
<b>Office costs e.g. postage, telephone, stationery</b>				
• Darwin funding				
• other funding				
<b>Travel and subsistence</b>				
• Darwin funding				
• other funding				
<b>Printing</b>				
• Darwin funding				
• other funding				
<b>Conferences, seminars etc</b>				
• Darwin funding				
• other funding				
<b>Capital items/equipment (please break down)</b>				
• Darwin funding Satellite Imagery:      Landsat ETM SPOT Imagery IKONOS/Quickbird imagery				
• other funding				
<b>Other costs (please specify and break down)</b>				
• Darwin funding Field work sampling costs - including boat time HWU Fees for MSc Course STRI Laboratory Bench Costs				
• other funding Field work sampling costs including boat time (STRI)  HWU Fees for MSc Course (HWU) STRI Laboratory Bench Costs (STRI) EPSRC funding for PhD student				
<b>Salaries (from previous table)</b>				
• Darwin funding				
• other funding				
<b>TOTAL PROJECT COSTS</b>				
<b>TOTAL DARWIN COSTS</b>				
<b>TOTAL COSTS FUNDED FROM OTHER SOURCES</b>				

### 30. How is your organisation currently funded?

For the year ended 31 July 2001, Heriot-Watt University received support from the Scottish Higher Education Funding Council (SHEFC) of which was 38% of total income. Other sources of income include academic fees and support grants, research grants and contracts. See the attached Annual Accounts for the year ended 31 July 2001.

### 31. Provide details of all other funding sources identified in Question 29 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 funding the project will lever in to carry out additional work during or beyond the project lifetime. Indicate those funding sources which are confirmed.

STRI would be the main other contributor to the project and, as previously indicated, this would include covering the proportional salary costs of the host country co-ordinator and his experienced research assistant. Significant and substantial in-kind donations would also be included by subsidising, to the costs of the project, the normal STRI research vessel and equipment usage rates and laboratory bench fees. Heriot-Watt University would contribute by subsidising to approximately 50% the costs of normal overseas tuition fees for the MSc courses. Two years of the 3-year EPSRC funding of the PhD student, Ms Sarah Benfield, would be dedicated to work of the Darwin project. Other sources of funding are being, and would, be sought throughout the project for any additional work and Conference sponsorship, etc.

### 32. Please give details of any further resources sought from the host country partner Institution(s) or others for this project that are not already detailed in Questions 29 and 31. This will include donations in kind and un-costed support e.g. accommodation.

STRI and Heriot-Watt University intend to explore the availability of additional good quality, nominally priced and free satellite imagery coverage of the research area with NASA and SPOT Image, with a view to adding to the historical and real-time assessment of the study area. As the programme develops, IKONOS and Quickbird high spatial resolution imagery of 1-2 specific sites will be acquired – and further sources will be explored.

### 33. Please separately indicate in Table D the amounts of grant requested under the Darwin Initiative and any confirmed funding/income from elsewhere (where these may be costed). Add together to show total project costs.

Table D Darwin funding request

	2003/2004	2004/2005	2005/2006
<b>Amount of Darwin Initiative funding requested</b>	<b>50,745:27</b>	<b>58,063:77</b>	<b>59,345:27</b>
<b>+ Funding/Income from other sources</b>	<b>64,247:00</b>	<b>56,196:00</b>	<b>46,673:00</b>
<b>= Total project cost</b>	<b>114,992:27</b>	<b>114,259:77</b>	<b>106,018:27</b>

**34. FCO NOTIFICATION**

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

**CERTIFICATION 2003/04**

On behalf of the trustees/company (*delete as appropriate*) Heriot-Watt University

I apply for a grant of £ 50,745:27 in respect of expenditure to be incurred in the financial year ending 31 March 2004 on the activities specified in paragraphs 21 and 23.

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.

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)	I. G. ROSS
Position in the organisation	Director, Research & Consultancy Services

Signed \_\_\_\_\_

Date:

07 JAN 2 003

London SW1E 6DE.