DEFRA
Department for
Environment,
Food & Rural Affairs

DARWIN INITIATIVE

APPLICATION FOR FOLLOW - UP FUNDING 2003

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 and on the merit of your current / recently completed Darwin Initiative project. Please note the additional information requirements (CVs and letters of support as detailed in the Guidance for Applicants). Application is by invitation only.

Submit by 11 July 2003

1. Contact Details

	Ref. (Defra/ECTF only):
Name and address of UK organisation The Natural History Museum London SW7 5BD	

ORIGINAL PROJECT DETAILS

2. Title and Defra reference number (162/-/---) of original Darwin Project

Land snail diversity in Sri Lanka. Reference 08/214

3. What have been the main outputs/outcomes of the original project to date?

Training: over 100 undergraduate and 3 post-graduate students; extensive training of ten field/research assistants in field sampling methodology, including transect sampling, use of Global Positioning System, canopy densitometer, pH meter; documentation, preparation and preservation of specimens; identification techniques; use of reference collections and library facilities; use of Geograhical Information Systems; database preparation and report writing.

Country-wide and two regionally focussed surveys of land snail faunas in threated forest.

Establishment of reference collections/databases at Department of National Museums and University of Peradeniya.

Fourteen publications to date including one book, CD-ROM, papers, laminated field guides in English, Tamil and Sinhala (local language editions recommended as standard text for 'A' level biology students), field guide to pest & exotic species.

About twenty public presentations; two major exhibition venues; TV programme and feature articles in newspapers.

Close links established between NHM and the Sri Lankan Government contributing to the setting up of new biodiversity capacity and projects.

4. What steps have been taken to ensure that project objectives will be achieved within the original project term?

The original project objectives (as revised in October 1999) have been fully achieved. In addition, Tamil and Sinhala translations of the field guide have been published, with World Bank funding, and these have been recommended as official texts for 'A' level biology students in Tamil medium and Sinhala medium schools and colleges. Four additional presentations have been given to scientific, public and natural history society meetings.

FOLLOW-UP PROJECT DETAILS

5. Follow- up project title (not exceeding 10 words)

Land snails as models for biodiversity assessment in Sri Lanka

6. Principals in project. Please provide a one page CV for each of these named individuals where different from the original project. Letters of support must also be provided from the host country partner partners endorsing the partnership and value of the follow-up funding.

Details	**Project leader**	**Other main UK personnel**	**Main project partner or co-ordinator in host country**
Surname	Naggs	Raheem Miss Raheem is a host-country national currently based at the NHM and will work at the NHM for the duration of the project. For the purposes of this application, Miss Raheem is treated as UK personnel	Pethiyagoda
Forename(s)	Fred	Dinarzarde	Rohan
Post held	Biodiversity & Conservation Officer	Researcher	Advisor
Institution (if different to above)			Ministry of Environment & Natural Resources
Department	Zoology	Zoology	
Telephone			
Fax			
Email			

7. Please list the overseas partner organisation(s) that will be involved in the follow-up project and explain their role and responsibilities in this work and in the original project (if applicable).

Overseas partner organisation: Ministry of Environment & Natural Resources. During the course of the original project we developed a close working relationship with the Wildlife Heritage Trust of Sri Lanka and the Managing Trustee, Rohan Pethiyagoda. A strategy was developed for improving the capacity and standards of biodiversity work in Sri Lanka. When the current government in Sri Lanka came to power in January 2002, Rohan Pethiyagoda was brought in to the administration as the Advisor to the Minister of Environment to establish a biodiversity and environmental policy and implement a new biodiversity strategy. The resulting Sri Lankan Rainforest Initiative (document attached) has led to the establishment of a Sri Lankan Biodiversity Authority (SLBA) and the setting up of a National Institute of Biodiversity (NIB). Biodiversity capacity in Sri Lanka is undergoing rapid development but is in a transitional phase and our partnership is with the Ministry of Environment (SLMoE) until the Institute is fully functioning. Rohan Pethiyagoda will work closely with us in preparing project outputs.

8. Please provide written evidence of commitment and capability of overseas partner in achieving the objectives of this project. Are formal agreements in place for overseas partner responsibility in this project?

Through contact with the Foreign and Commonwealth Office and with the support of the Sri Lankan Prime Minister, the Sri Lankan Minister of Environment sought a formal agreement on biodiversity co-operation with the UK, with the Natural History Museum, London, as the key partner. The Minister was informed by the FCO that the UK does not enter into bilateral agreements on co-operation in biodiversity (copies of correspondence attached). Following correspondence with and visits from Rohan Pethiyagoda, the Advisor to the SLMoE, The Natural History Museum, with the SLMoE have drafted an MOU providing for long-term co-operation across a wide range of CBD objectives. This can be finalised and implemented as soon as the Sri Lankan Biodiversity Authority and Institute are established.

9. What other consultation or co-operation will take place or has taken place already with other stakeholders such as local communities. Please include any contact with the government of the host country not already provided.

10. Define the purpose (main objective) of the follow-up project in line with the logical framework. How is it linked to the objectives of the original Darwin project?

As set out in the original Darwin Initiative project proposal in 1998, the snail project was perceived as a leading project for co-operation in biodiversity across a wide range of systematic groups and across a wide range of biodiversity-related activities in Sri Lanka. The Darwin Initiative post-project funding is specifically sought to build on the land snail faunal work as a leading example of what can be achieved for other groups. The main objective is to work towards describing the fifty to a hundred plus newly discovered species and set these in the context of a revisionary faunal study. Alternative funding for this work is not available. Central to biodiversity assessment is a clear understanding of the species that are present. The original Darwin project led to the discovery of many new snail species and revealed that the existing species concepts are in need of significant revision. In addition to publishing new species discriptions and taxonomic revisions in conventional publications we wish to address this fundamentally important subject in new ways. The interactive CD-ROM will be developed to include the new discoveries and be enhanced with information on distributions and habitats and a summary version will be presented on the World-Wide Web. The 'field guide' produced for the original project was a guide to the diversity of Sri Lanka's snail fauna. A new user friendly guide will use knowledge gained from the project to show common snails of different habitat types, including agricultural pests.

11. Define projected Outputs and Outcomes and explain how these will contribute towards achieving the purpose of the project. How will these measures help to strengthen the long-term impact and legacy of your original Darwin project?

Taxonomic and systematic revisions with descriptions of new species.

Lack of support for descriptive and revisionary taxonomy in the past few decades has resulted in both a serious lack of current information on species diversity and a lack of personnel equipped to make identifications at a time when the need for such capacity is recognised to be greater than ever. Over 30% of the species recorded in the original project are undescribed and many of the 'known' taxa have been confused and are in urgent need of revision. For future monitoring of this key indicator group it is essential that these land snail species are clearly understood and the taxonomic revisions and descriptions are published.

The outputs of this work will be:

1. Advanced training and research experience for Dinarzarde Raheem.

2. Training and work experience in electronic media communication for Hasantha Sanjeewa

3. At least five research papers on the following subject areas: taxonomy and systematics, distribution and conservation.

4. Expansion of the interactive CD-ROM guide and publication of a new edition

5. A new field guide structured to show species associated with different habitat types and including pest and exotic species.

6. Provision of an IUCN Red List evaluation of the Sri Lankan land snails.

7. An assessment of the distribution of land snail diversity in Sri Lanka and of key areas for conservation.

In addition we will give presentations and poster presentations at seminars and meetings as opportunities arise.

The main long-term impacts of the original project are:

1. Provision of advanced training and work experience for Dinarzarde Raheem, who is expected to play a leading role in biodiversity work in Sri Lanka and work experience and training in electronic communications and Geographical Information Systems for Hasantha Sanjeewa who is on a career path in ecotourism and biodiversity communication.

2. Establishing a distributional database of Sri Lankan land snails to allow monitoring and conservation measures to be established.

3. Demonstrating the contribution that land snails can make to conservation work, based on the value of snails as a key group for monitoring future changes and their value as research subjects for understanding patterns of diversity and survivorship in fragmented forests.

4. Presenting the land snail study as a leading project to show what might be achieved across a wide range of taxa.

These long-term impacts require a sound taxonomic base. Current plans by the Sri Lankan government to implement a survey of Protected Areas (PAs), would follow the survey-based lead demonstrated in our original project and the snail work can continue to play a leading role by consolidating the taxonomy of the original project's discoveries.

12. Explain how gains from follow-up work will be distinct and <u>additional</u> to those of the existing project. Show where possible how these gains require limited resources and could not be achieved without the funding.

The original project sought to establish resources in Sri Lanka to allow identifications of the Sri Lankan snail fauna to the then current state of knowledge and to carry out surveys to give an information baseline on distributions. The snail fauna was considered to be relatively well-known. The findings from the project that at least 30% of the fauna was new to science and that existing species concepts were in need of major revision demonstrated that this was not the case. The current project proposal is to work up the discoveries from the original project so that this work can be established in the scientific literature and provide an up-to-date and accurate base line for current research, future faunistic studies and long-term monitoring for conservation evaluation. The field studies conducted in the original project were extensive and labour intensive, whereas the need now is to work the material up with access to the research facilities, reference specimens, library resources and wide range of expertise available at The Natural History Museum. Thus the costs involved are primarily salary costs for the Sri Lankan personnel and are relatively low in relation to the significance of the output. Without Darwin Initiative funding the expertise, uniquely acquired on this project by Dinarzarde Raheem, will not be available to carry out this work. There is no foreseeable prospect of anyone else attempting to conduct the systematic research. This work could not be carried out to a comparable standard by anyone who had not benefitted from knowledge gained by directly participating in the field work and discovery of these species.

13. Please include details of how outputs will be disseminated during and/or after the project period

At least three substantial, formal taxonomic papers will be prepared and submitted for publication in peer-reviewed journals during the project period.

Two papers will be published on distributions and on conservation.

Detailed documentation will be submitted to IUCN for red listing of threatened species.

A revised interactive CD-ROM will be published with extensive information on taxa, including distributions, habitats, additional images of specimens and images of habitats. Newly described taxa will be included.

A version of this will be made available on the WWW.

A new, expanded and restructured field guide will be prepared ready for publication. This will be arranged with snails organised according to habitat type and will include agricultural pest species.

14. How will the project assist the host country in working towards the objectives (or implementation) of the Convention on Biological Diversity? References to the Convention should be specific, for example, by referring to Articles, cross-cutting or thematic issues[1]. Is any liaison proposed with the CBD national focal point in the host country?

The Sri Lankan government, through the SLMoE (the CBD national focal point is the Ministry of Environment's Biodiversity Secretariat), is embarking on a new initiative to establish an inventory of its biota and meeting the objectives of Article 7 is a high priority as stated in Sri Lanka's second national report to the CBD. The specimen and literature resources at the NHM are of unique importance for identifying and revising much of the biota and this is fully recognised in Sri Lanka. The land snail work is important as a leading taxonomic group demonstrating what can be achieved by close collaboration using UK and Sri Lankan expertise, by developing access to the Sri Lankan biota and using NHM resources. The project will also progress implementation of Article 8 in Sri Lanka by contributing to the management of Sri Lanka's protected areas network, and assisting with efforts to combat invasive alien species. Furthermore the ouputs from the project will support implementation of the programme of work on Agricultural

[1] Refer to the Guidance Notes for Applicants for sources of further information

Biodiversity by enabling Sri Lankan scientists to discriminate between those snail species which are causing damage to Sri Lankan agriculture and those which are not.

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

The Sri Lankan government's new inventory projects are initially targeted at Protected Areas. Snails are recognised as a key group for assessing and monitoring biological diversity and are included in the surveys for this reason. It is certain to be the case that other invertebrate groups considered to be important indicator species will also need revision and include significant numbers of new taxa. High priority should be given to publishing new taxa in order to provide a sound basis to the inventory and allow new species to be set on record. We have been asked to encompass this descriptive work in this proposed Darwin project as a precedent to support the case for a similar approach with other poorly-known groups.

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

Pest species of molluscs have become a major problem in Sri Lanka, the extent of which only became apparent during the original project. In the highland areas of Sri Lanka, cash crops are only second in importance to tea plantations. Pest gastropds cause more damage to cash crops than do any other pest group and, in many areas, far exceed the damage caused by insect pests. Only by knowing the full extent of the native biota can the status of exotic species and arrival of exotic species be readily recognised. An exotic species notification process has been put in place. Most of the pest slugs are of temperate origin but the pest status of some tropical slugs that have been found in disturbed forest needs clarification.

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

The Sri Lankan government is very much aware of poor standards in some areas of biodiversity capacity and related personnel and also recognises the bona fide intentions of the NHM and the Darwin Initiative in seeking to facilitate Sri Lanka's desire to meet CBD objectives. The current political climate is very favourable for making rapid progress on the CBD and it is fully recognised that the process of setting up a Biodiversity Authority and Institute must be driven forward in order to change the whole approach to biodiversity to an extent that the momentum will not be lost with any future change of government. The best way that we can help to achieve this is to engage with the Sri Lankans in targeting as wide a range of CBD activities as possible. The snail project will continue to be a leading example.

18.How will the project be advertised as a Darwin project and in what ways would the Darwin name and logo be used?

We have a successful track record of promoting the Darwin Initiative in as many ways as possible by means of exhibitions, obtaining press and television coverage, giving public and scientific presentations and in displaying the Darwin Intiative logo wherever possible. We will continue to promote the Darwin Initiative in both a planned and opportunistic way and will give full acknowledgement to the Darwin Initiative in any publications and on the WWW.

19.Are you aware of any other individuals/organisations carrying out similar work? Are there completed or existing Darwin Initiative projects (other than your original project) 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.

Current institutional capacity for addressing biodiversity issues is recognised to be totally inadequate by the Sri Lankan Government and the Ministry of Environment (SLMoE) is actively engaged in setting up a new National Biodiversity Authority (NBA) and National Institute of Biodiversity (NIB). Although building work on the NIB has only just begun a biotic survey programme, using temporary accommodation, is to be launched early in 2004. With the Sri Lankan government we are currently establishing a survey programme of Protected Areas involving plants, several insect groups, reptiles, mammals, birds, crustaceans and snails. The resulting research investigations are to be supported by funding obtained by the contributing research teams. The surveys will be initiated in seven selected areas that have Protected Area (PA) status but which have never been systematically surveyed for biodiversity. In addition to survey reports, these surveys funded by the Asian Development Bank (ADB), Global Environment Facility (GEF) and the Netherlands government will establish core collections of reference material and data for the NIB. The original Darwin project provided a leading example for this initiative and the aim of the follow-up project is to continue to provide a leading role for land snails by working-up the discoveries from the original survey-based project. A major priority for the SLMoE is to have a sound taxonomic base for its biodiversity programme and for newly discovered species to be described. Such taxonomic revisionary and descriptive work is outside the scope of the PA programme, but it is intended that the snail project will continue to play a leading role by providing a model for other groups covered in the PA surveys and provide leverage for attracting funding for taxonomic revisions of other groups.

The Sri Lankan Wildlife Heritage Trust (WHT) is a small but very dynamic organisation that carries out surveys and publishes extensively on the Sri Lankan biota. We work very closely with the Trust and Rohan Pethiyagoda, who in addition to being advisor to the SLMoE, is the managing director of WHT. We shared resources on the original project and are currently planning a special Sri Lankan research issue of the Zoology Bulletin of the Raffles Museum with its editor, Peter Ng.

Rainforest Rescue International (RRI) have just initiated a project in Sri Lanka. It is led by Robin Lock who established the tropical plant collection at the Eden Project. RRI has funding from the Eden Project and is promoting the importance of the Sri Lankan rainforest, see: http://www.rain4est.org/. There is no overlap in the work we are undertaking but we are in close contact and exploring ways in which we might co-operate and complement each other's work.

The Darwin Initiative project 'Effective Management for Biodiversity Conservation in Sri Lankan Coastal Wetlands' addressed issues in a range of coastal habitats, including mangrove forest. Again, we are in contact with the group and in particular we have provided help and NHM resources for Dr Simon Cragg but there was no overlap in our projects.

20. Will the follow-up project include training and development? Please indicate who the trainees will be and criteria for selection indicating where they were involved in the original project. 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?

Training will take the form of supervised work experience and research.

Miss Dinarzarde Raheem is a Sri Lankan national who was an outstanding project leader in Sri Lanka. She will lead the systematic research with Fred Naggs as a co-worker and supervisor. Miss Raheem is expected to play a leading role in Sri Lanka's future biodiversity work, continue her close links with the NHM and facilitate long-term co-operation in biodiversity between Sri Lanka and the UK.

Hasantha Sanjeewa is a Sri Lankan national who was a project field and research assistant on the original project and he provided photography and computer support. Hasantha was the most promising of our field assistants and has just completed work on our World Bank-funded translation project in Sri Lanka. He is in the third year of a four-year part-time zoology degree. He has just been appointed as a field biologist by the Jetwing Hotel Group in Sri Lanka. Jetwing is the leading ecotourism group in Sri Lanka; we worked with them on the original project and remain in contact. Jetwing are happy to release Hasantha for the agreed period of six months and will also provide publicity for the project. Hasantha's contribution to the project will be to use his computer skills and knowledge from the project to enhance the CD-ROM under Dinarzarde Raheem's and Fred Naggs' supervision. As part of this he will develop his skills in Geographical Information systems under the supervision of James Chimonides and in image processing under the supervision of Harold Taylor. Hasantha's involvement will contribute sigificantly to his skills and experience and be a valuable asset in his commited career in the field of Sri Lankan biodiversity.

21. 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 overall strategy is to establish long-term collaboration that involves NHM and other UK resources/expertise working with the SLBA, the NIB and other agencies in Sri Lanka. The sequence of activities: biotic surveys, training and research followed by critical taxonomic/systematic revisions, will lay a robust foundation for future surveys, conservation measures and conservation evaluation. Enormous progress has been made over the past three years and the wider objectives are beginning to be achieved and fit in place. This additional support from the Darwin Initiative will allow the key stage of post-project taxonomic work to be a further leading example in the process. The NHM has made a long-term commitment to continue work in Sri Lanka.

The project will have a distinct identity and funding but be linked with the wider objectives of new biotic surveys of Protected Areas (PAs) being set up by the Sri Lankan government to enhance the credit which can be attributed to the Darwin Initiative for its leading role. As part of the wider range of outputs from the combined programme a book will be published on the natural history of Sri Lanka.

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

Project implementation timetable

Date	Key milestones
1.10.2003	Project launch with employment of Ms D Raheem at NHM
January 2004	Submit paper on conservation status (paper 1)
January 2004	Make detailed submission of data to IUCN on threatened snail species for red listing
April 2004	Hasantha Sanjeewa starts at NHM for six months carrying out technical support and being provided with training on text input, image editing and mapping for CD_ROM
April 2004	Submit 1st taxonomic paper for publication (paper 2)
end September 2004	Hasantha Sanjeewa completes work period and returns to Sri Lanka
October 2004	Submit 2nd taxonomic paper for publication (paper 3)
March 2005	Submit 3rd taxonomic paper for publication (paper 4)
July 2005	Submit analytical paper on aspects of Sri Lankan land snail distributions (paper 5)
October 2005	Release CD-ROM and user-friendly laminated folding guide for publication (In order to prevent nomenclatural priority problems, any new taxa in press must be formally published before these secondary publications can be released)
October 2005	Establish summary version of CD-ROM on WWW.

23. 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)

The original project produced a considerable amount of information on species distributions and abundance and many new discoveries were made. The primary purpose of this project is to set this information, the discoveries of new species and some of the interpretive information on record. The varied publication outputs ranging from those in scientific journals to electronic media and the semi-popular/college level guide will encompass a wide audience. The other important purpose of the project is to provide a leading role for the biotic surveys about to be launched in Sri Lanka. The overall purpose is to contribute to the knowledge understanding and conservation of this unique biota and our outputs will seek to achieve this.

MONITORING AND EVALUATION

24. Describe how the progress of the project 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.

The project will involve an intensive work programme conducted in the Zoology Department at the NHM. Progress will be managed by the Department's line management, appraisal and reporting system during the project's lifetime and at its conclusion and additional outputs will continue to be monitored beyond the projects conclusion. The taxonomic revisions, descriptions of species, publications on distributions and conservation, IUCN Red listing, publication of the developed CD-ROM and user friendly guide will be performance indicators for Fred Naggs and Dinarzarde Raheem and evaluated in the management process.

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

This is a transition period for institutional capacity development in Sri Lanka and although Rohan Pethiyagoda is fully engaged with setting up the Biodiversity Authority and Institute and in launching a major survey programme, he will take a close interest in the progress of the project and be sent drafts of all outputs from their provisional compilation to final publication. Miss Raheeem is both a host-country partner and, being currently based at the NHM, a UK researcher. Miss Raheem exemplifies the degree of international co-operation and interaction that is essential for us to achieve our long-term objectives

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

Value for money will depend on the productivity of the Sri Lankan project personnel, who were highly productive and key members of the original project team in Sri Lanka, and of Fred Naggs, the original project leader. The project will be based in the Zoology Department at the NHM and be subject to the Department's management, monitoring, review and reporting system. Ms Jeni Stewart, Grants Manager, Department of Zoology, NHM, has extensive experience of managing the finances of Darwin projects, she will manage the budget and advise on all financial aspects of the project to ensure value for money.

27. Reporting Requirements. All projects must submit six monthly reports (by 31 October each year) and annual reports (by 30 April each year) even if they have not completed the full period to be reported on. 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	☐
Annual report	1 April 2003 – 31 March 2004	30 April 2004	☒
Six month report	1 April 2004 – 30 September 2004	31 October 2004	☒
Annual report	1 April 2004 – 31 March 2004	30 April 2005	☒
Six month report	1 April 2005 – 30 September 2005	31 October 2005	☒
Final report	1 April 2003 – project end date	3 months after project completion	Yes

LOGICAL FRAMEWORK

28. Please enter the details of your project onto the matrix using the note at Annex 2 of the Guidance Note.

Project summary	Measurable indicators	Means of verification	Important assumptions
Goal: 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 • the conservation of biological diversity, • the sustainable use of its components, and • the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources			
Purpose Provide a leading example of post-survey taxonomic revision with new species and higher level taxa descriptions. Establish a baseline of land snail diversity and distributions and assessment of threatened status to enable conservation measures to be put in place. Publish results in peer reviewed journals and disseminate information to a wide audience by means of a CD-ROM, the WWW, field guide and scientific and public presentations.	1. attributing species-level taxa to generic categories. 2. resolution of species limits of new taxa. 3. revision of species and generic level systematics 3. preparation of data base on species distributions, abundance and habitat 4. establishing IUCN red list categories for all of the land snail species, including undescribed taxa as set out in the IUCN programme at: http://www.redlist.org/info/programme.html. 6. Preparation of papers for publication on taxonomic, systematic, conservation and distributional information 7. Preparation of CD-ROM 8. Preparation of user-friendly snail guide	Publication of results in peer-reviewed journals Publication of comprehensive interactive CD-ROM Publication of user-friendly field guide Summary guide to project information on NHM's website	Sri Lankan project workers will work with Fred Naggs using the unique resources of the NHM to produce a high output of top-quality publications. Future biotic surveys in Sri Lanka will adopt the same pattern of work, with the development of ongoing co-operation with the NHM and other UK institutions and workers

	9. Placing summary of project information on WWW		
Outputs 1. taxonomic revisions 2. descriptions of new species 3. evaluation of entire recorded land snail fauna for IUCN red listing 4. publications on distributions and conservation 5. major development of CD-ROM 6. user friendly guide 7. Summary information on WWW	1, 2. publication of taxonomic revision papers and new species descriptions 3. submission of information on extinction threat categories for all of the recorded Sri Lankan snail fauna to IUCN 4. publication of analytical paper(s) on aspects of Sri Lankan land snail distributions 5. addition of new species to CD-ROM, a summary of information for all species, including facsimilies of the primary literature, images of living specimens, habitat views and distribution maps 6. preparation of a user-friendly, laminated folding guide giving common species of different habitat types, including pest species 7. Presentation of Summary information on WWW	1, 2, 4. publication of papers in peer-reviewed journals 3. inclusion of Sri Lankan land snail fauna in the next Red List of Threatened Species. 5, 6. publication by Zoology Department of NHM and copies sent to the Darwin Initiative	1. The degree of taxonomic/systematic complexity is not unusually difficult to resolve. 1, 2, 4. processing of papers and publication can be achieved by journals within the deadline 3. data is processed in time by IUCN for inclusion in the next Red List of threatened Species that is due to be published in 2004. 5, 6. Publication of the CD-ROM and the snail guide will go ahead after 'in press' taxa have been formally published.
Activities Anatomical study of Darwin Intiative project specimens focusing on key anatomical features appropriate to systematic level, such as those of the reproductive system for species-level discrimination. Analysing data on distributions. Comparison of material with reference specimens and types in the NHM and, using the NHM literature resources, with published information.	**Activity Milestones (Summary of Project Implementation Timetable)** Year 1 Miss Raheem, working with supervision and input from Fred Naggs: 1. Identify all remaining taxa collected from the surveys to morphospecies. These identifications will then be combined with all of the projects existing information onto a comprehensive database. 2. organise material into main taxonomic groupings and group into manageable subgroups for critical studies. 3. work through subgroups following set procedure: i) establish provisional species groupings ii) carry out critical anatomical studies of shell structure and soft anatomy, concentrating on key anatomical features of the reproductive system, the radula and jaw. Use light and electron microscopy and preparations such as critical point dried tissues. iii) establish species limits using anatomical, distributional and habitat criteria.		

Compiling anatomical figures, writing descriptions and information on habitat, distribution and abundance Conducting specialist procedures such as light and electron microscopy to investigate microstructure. Preparing papers for publication. Inputting data to CD-ROM and developing for publication. Producing field guide.	iv) compare material with type specimens, general collection specimens and published information to establish nomenclatural status of species groups. v) prepare descriptions of new species and revised descriptions of allied, previously described taxa, produce figures and data on anatomy, distribution maps and information on habitat and ecology. 4. produce a database of species information, including IUCN red listing for the whole Sri Lankan land snail fauna. 5. Submit 3 papers for publication 6. With H. Sanjeewa under the supervision of F. Naggs and D. Raheem, with additional training and supervision from J.Chimonides (GIS and web expert) and from H. Taylor (image editing and electronic formatting expert). i) carry out literature searches and scanning ii) prepare distribution maps from database iii) identify and organise images of specimens and habitats iv) add data to CD-ROM on interactive format Year 2 1. Work through additional subgroups following procedure in 3 (i-v) above 2. submit two papers for publication. 3. write text and edit content of CD-ROM for approximately 300 species and make ready for publication. 4.Prepare field guide using photographic images, arrange species according to habitat and include pest and exotic species. 5. enter summary version of CD-ROM on WWW.

FINANCIAL ASPECTS

29. Please state costs by financial year (April to March). <u>Follow-up funding will be provided for up to a maximum of 2 years.</u> Use current prices - do not include any allowance for assumed future inflation. For programmes of less than 2 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.

	2003/2004%	2004/2005%	2005/2006%
United Kingdom project team members and role			
Fred Naggs (Project Leader) (2003/2004 30% for 6 months; 2004/2005 30% for 1 year; 2005/2006 30% for 6 months)	30	30	30
Dinarzarde Raheem (Research Scientist) (2003/2004 100% for 6 months; 2004/2005 100% for 1 year; 2005/2006 100% for 6 months)	100	100	100
James Chimonides (Geographical Information Systems) (2003/2004 10% for six months; 2004/2005 10% for 1 year; 2005/2006 5% for 6 months)	10	10	5
Harold Taylor (Image processing) (2003/2004 5% for 6 months; 2004/2005 5% for 1 year; 2005/2006 5% for 6 months)	5	5	5
Host country/ies project team members and role			
Hasantha Sanjeewa (Research Assistant) (ie 2004/2005 100% for six months)	0	100	0

Rohan Pethiyagoda	5	5	5

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 £	
	Darwin	**Other**	**Darwin**	**Other**	**Darwin**	**Other**
Fred Naggs	0.00		0.00		0.00	
Dinarzarde Raheem		0.00		0.00		0.00
Hasantha Sanjeewa	0.00	0.00		0.00	0.00	0.00
Rohan Pethiyagoda	0.00		0.00		0.00	
James Chimonides						
Harold Taylor						
TOTAL COST OF SALARIES						

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

	2003/2004 £	2004/2005 £	2005/2006 £	TOTAL £
Rents, rates, heating, lighting, cleaning, overheads				
• Darwin funding	0.00	0.00	0.00	0.00
• other funding	0.00	0.00	0.00	0.00
Office costs e.g. postage, telephone, stationery				
• Darwin funding	0.00	0.00	0.00	0.00
• other funding	0.00	0.00	0.00	0.00
Travel and subsistence				
• Darwin funding	0.00			
• other funding	0.00	0.00	0.00	0.00
Printing				
• Darwin funding	0.00	0.00		
• other funding	0.00	0.00	0.00	0.00

Conferences, seminars etc				
• Darwin funding	0.00	0.00	0.00	0.00
• other funding	0.00	0.00	0.00	0.00
Capital items/ equipment (please break down)				
• Darwin funding	0.00	0.00	0.00	0.00
• other funding	0.00	0.00	0.00	0.00
Other costs (please specify and break down)				
• Darwin funding Natural History Museum Overheads				
• other funding				
Salaries (from previous table)				
• Darwin funding				
• other funding				
TOTAL PROJECT COSTS				
TOTAL COSTS FUNDED FROM OTHER SOURCES				
TOTAL DARWIN COSTS				

30. Please provide a written justification of why alternative funding is not available from within your own organisation or from other sources.

Adequate funding for taxonomic/systematic work associated with faunal revisions is widely recognised to be virtually unobtainable from funding agencies in general as was detailed in the 2002 House of Lords Select Committee Report: 'What on Earth? The threat to the science underpinning conservation'.

31. Will matched funding be provided? 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 that are confirmed.

NHM staff costs will be provided as an in-kind contribution.

The project will link with a wide-ranging survey of seven Protected Areas which is being pursued by the Sri Lankan Government and which is funded by the Asian Development Bank, GEF and the Netherlands Government. The funding details have not been released yet. What we are seeking funding for is a discrete subject area that will not be covered by this funding but it will demonstrate what will be required in the next stage of the PA surveys. Thus the potential leverage beyond this project lifetime is likely to be very significant.

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.

33. Please separately indicate in Table D the amounts of grant requested for follow–up funding 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 £	200/2006 £
Amount of Darwin follow-up funding requested[2]			
+ Funding/Income from other sources			
= Total follow- up project cost			

34. What was the amount of funding for the original Darwin Project?

	Total Project Costs £
Amount of original Darwin Initiative project funding	
+ Funding/Income from other sources	
= Total original project cost	

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 details of the Darwin follow-up project and the resultant work in the UK or in the host country. ☐

CERTIFICATION 2003/04

On behalf of the trustees/company *(delete as appropriate)* The Natural History Museum, London.

I apply for a grant of £15,029.00 in respect of expenditure to be incurred in the financial year ending 31 March 2004 on the activities specified in the Logical Framework.

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)	**PROF PAUL HENDERSON**

[2] Follow-up funding will be provided for up to **50%** of the original costs for the full Darwin project.

Position in the organisation	Director of Science

Signed		**Date:**	

Please return completed form to The Edinburgh Centre for Tropical Forests (ECTF) by 11July 2003 by e-mail to stefanie.halfmann@ed.ac.uk

Where it is not possible to send the full application in electronic form (for example if signed references are not available electronically), a hard copy of the full application should also be sent to ECTF, Darwin Monitoring & Evaluation Project, Stefanie Halfmann, John Muir Building, Kings Buildings, University of Edinburgh, Mayfield Rd, Edinburgh EH9 3JK