

# DARWIN INITIATIVE FOR THE SURVIVAL OF SPECIES

## APPLICATION FOR GRANT

Please read the attached Guidance Note before completing this form. Give a full answer to each section; applications will be considered on the basis of information submitted on this form. Applicants are asked not to use the form supplied to cross refer to information in separate documents. The space provided indicates the level of detail required but you may provide additional information on a separate sheet if necessary. You are asked also to complete the summary sheet attached at the end of this form. Although you may reproduce this sheet in a reasonable font, you should not expand it to more than an A4 sheet as additional information will not be taken into account.

### 1. DETAILS OF APPLICANT

#### 1.1 Name of organisation applying

The Natural History Museum

#### 1.2 Address for correspondence

Department of Botany  
The Natural History Museum  
Cromwell Road  
London SW7 5BD

#### 1.3 Person who may be contacted about this application, and position in organisation.

Mr J.R. Press  
Researcher, Higher Plants Division

#### 1.4 Telephone and FAX numbers

Tel:

Fax:

#### 1.5 Nature of the organisation (e.g. is it an academic institution, a registered charity, company limited by guarantee?)

The Natural History Museum, a non-departmental public body, is an international centre for biosystematic research that manages and maintains one of the World's most comprehensive and extensively used reference collections of biological and mineralogical specimens. NHM staff organise and/or participate in training a large number of persons in identification techniques, taxonomic theory and collection management techniques, as well as more specialist *ad hoc* taxonomic training. The NHM develops and stages exhibitions for communicating information about the natural world to the general public in a factual, comprehensible and stimulating manner.

1.6 Describe briefly the aims, activities and structure of your organisation:

Aims: To maintain and develop its collections and to use them to promote the discovery, understanding, responsible use and enjoyment of the natural world.

Activities: The Science Departments of the NHM undertake a wide range of biological and mineralogical research as well as managing and developing the extensive collections of specimens. The focus of scientific research in the Biodiversity Programme centres around: investigations of how many species there are on Earth; how they are distributed through space and time; how they can be recognised and discriminated from each other; and what are their patterns of evolutionary relationship. Particular emphasis is being placed on producing practical tools for the recognition of key taxa such as indicator species, developing interactive methods for the assessment of conservation priorities and developing sampling protocols for the quantitative assessment of biological diversity. NHM staff are also actively involved in collaborative training programmes, helping to develop biosystematic resources and expertise in less developed countries.

Structure (enclose chart if appropriate): Around 320 scientific personnel work in NHM, either as permanent staff members or externally-funded, fixed-term, contract researchers. These scientists comprise the Museum's five research departments, Botany, Entomology, Mineralogy, Palaeontology and Zoology. The activities of these staff are focused in six research themes: Systematics and Evolution; Faunas and Floras; Environmental Quality; Biomedical Sciences; Earth Materials, History and Processes; Ecological Patterns and Processes; and a Museum-wide Curation Programme.

1.7 Provide brief details of the relevant past experience and achievements of the person to be responsible for the activities for which funding is sought. (This will normally be either the person completing this form or the contact at Section 1.3).

Mr J.R Press has extensive experience in floristic studies as a researcher, editor and project manager. He is the author of 15 books, including the *Flora of Madeira* and worked extensively on *The Enumeration of the Flowering Plants of Nepal*. As the former Head of the European Plant Information Centre (EPIC) he has been involved in the design of databases for storing specimen-backed information and, among other projects, headed a joint UK/ Italian team of researchers that produced a reference database for endangered plants. He is currently supervising the in house production of two fully illustrated books, involving supervising authors and a team of artists, as well as image capture.

1.8 Have you received funding under the Initiative before? If so, please give details.

Yes. £41, 142 for RECORDING AND RELATING TRADITIONAL KNOWLEDGE TO MODERN STUDIES OF BIODIVERSITY IN SOUTHERN HONDURAS (Project number 162/4/056, funded in Round 3 of the Darwin Initiative).

1.9 How did you learn about this Initiative?

Via The Natural History Museum's Science Marketing Office.

1.10 Geographical coverage of the organisation as a whole.

Global - in both terrestrial and marine habitats. The NHM's collections are currently being used by scientists from over 60 countries, and NHM staff are involved in collaborative research and/or training projects with persons from 46 countries.

1.11 A brief description of the organisation's recent achievements. (Please note that while short pamphlets may be useful, the Department does not wish to receive books or lengthy reports.)

The relevance of the research programmes of the Science Departments of the NHM continues to be demonstrated by the increase in their non-exchequer earnings in 1995/96 to £2.553 million (representing a 10% growth on the previous year). This is the twelfth consecutive year of increase. Interaction between Museum scientists and scientific colleagues elsewhere is extensive, with Museum staff dealing with almost twenty thousand requests for information annually. Each year, visiting scientists spend around sixteen thousand working days in the Museum, examining the collections and working with members of staff. A high proportion of these are young people from overseas who are developing skills that can be applied to biodiversity problems in their own, often biodiversity-rich, countries. Notable recent achievements in the biodiversity training arena includes the M.Sc. course in Advanced Methods in Taxonomy and Biodiversity. This 12 month course, is based at the NHM and includes inputs from Imperial College. This is the first year the course has been conducted and it is fully subscribed with more than 15% of the students coming from overseas. Applications for next year indicate that this percentage can be expected to increase. Our staff are heavily involved with the supervision of post-graduate research. From the total of 94 Ph.D. students currently working with NHM staff 22 are from overseas. The research activities of NHM staff are wide-ranging; collaborative projects are currently being pursued in 46 countries. In environmental and biodiversity study areas, collaboration is underway on ecogeographic studies of Madagascan fauna; trace metal accumulation and detoxification in marine gastropod molluscs; taxonomic studies of the lichenous fungi in the Southern Hemisphere; systematics of large jellyfish of the world; termite biodiversity and carbon flux in tropical rain forests; assessment of the seaweeds of the western coast of tropical Africa.; and, in South America, Eastern and Northern Africa, studies of the distribution of vectors of disease. This is a limited selection of our many interactions. Much of the information gained is placed in the public arena via scientific papers and books ranging from topical scientific articles in *Nature*, through to scholarly textbooks, field guides and contributions to a wide range on conservation literature.

## 2. PROJECT DETAILS

**It is important that applicants set out precisely their objectives and the activities of their proposal. Please be as explicit as possible.**

2.1 In what ways can this project be considered a Darwin project? How does the project relate to the Darwin principles? How would the project be advertised as a Darwin project and in what ways would the Darwin name and logo be used?

The Natural History Museum possesses a large and unique body of information on Nepalese plants, data which is urgently needed in Nepal. The NHM has also published the principal reference on Nepalese plant taxonomy. The Nepalese are anxious to document the vast floristic biodiversity of their predominantly rural nation, which relies heavily on local usage of plants, but are unable to contemplate such a project without first having unhindered access to relevant information that is not available within the country. Building on long-established British/ Nepalese links, this project will not only repatriate floristic data from specimens currently held at The NHM but will share the expertise of its staff with the Nepalese people. The Royal Botanic Gardens Kew and Royal Botanic Garden Edinburgh have signalled a willingness for their type holdings to be included in this work, allowing full coverage of British-held material. Meeting the Darwin principles of aiding conservation and sustainable usage in a country rich in biodiversity, and in helping Nepal to meet its Biodiversity Convention obligations, the project will involve local people and have a considerable impact on future work, in particular the planned *Flora of Nepal*. This is but the first of several large, international projects for which financial support, expertise and data are being actively sought. The training element within the project will provide further impetus, as well as creating a Nepalese-based capability for future work. Strong support at governmental level will be forthcoming from Nepal.

The project will be advertised on the internet (The Natural History Museum home page) and promoted via the Museum's Biodiversity Information Unit. The Darwin name and logo will be used on all outputs, as well as on letter heads when, for example, eliciting expert help for this and the planned *Flora of Nepal* projects. During their time at the Museum the Nepalese trainees will work as Darwin Scholars.

2.2 Give brief details of the main objective(s) of the project.

The main objective is to transfer vital information on vascular plants and bryophytes in Nepal by:-

- i. repatriating data on types, historical and other important collections as high-quality electronic images and hard copy.
- ii. making available existing baseline data to Nepal by converting the *Enumeration of the Flowering Plants of Nepal* (published by the Museum in the 1970s and 1980s) into a database format.
- iii. facilitating further studies by providing a bibliography of works covering or including Nepalese taxa which post-date the *Enumeration*.
- iv. providing a core of Nepalese workers trained in capturing specimen data.

2.3 Which overseas institutions, if any, will be involved in the project? Give the names of individuals as well.

Tribhuvan University, Nepal (Dr Krishna Shrestha)  
Royal Botanic Gardens, Kew (contact: Dr Roger Polhill)  
Royal Botanic Gardens, Edinburgh (contact: Dr David Long)

2.4 How has the need for the work been identified?

A meeting at the XV International Botanical Congress (Tokyo 1993) identified the need for a Flora of Nepal as a high priority. This project will be an essential first step towards a *Flora* which will have the active involvement of Tokyo University, Missouri Botanical Garden and all three Nepalese herbaria. Dr K. Shrestha (Tribhuvan University, Nepal), visiting the UK in September 1996, specifically requested support of this nature from UK institutes. This proposal is a direct response to his appeal.

2.5 Will the project include an element of training? Please indicate how many trainees would be involved and from which countries? Would those trained then be able to train others? Where appropriate give the length of any training course. Broadly how many local people will be involved? Give details of any follow-up work with the trainees after the end of the training.

One Nepalese researcher will be based full-time at The NHM and will receive training in data capture, image-handling, plant typification and project management throughout the two year period. A further six Nepalese workers will each spend two months at The NHM undergoing similar hands on training. Other staff in the Nepalese herbaria will have a more peripheral involvement, forming the Nepalese "node" of the project. A workshop will be held in Nepal at the end of the project to consolidate this experience. All of the trainees will themselves be able to train others, the six workers forming a large support group to the main researcher.

2.6 Set out in greater detail the proposed programme of work for which grant is sought. Include the programmes aims and measurable objectives using the attached list of output measures. Give the estimated timing of the achievements.

A total of 7 Nepalese workers will be trained during the project. The breakdown is:-

1 worker (post-doctoral) for a period of 2 years.

This individual is designated as the Nepalese co-ordinator in the programme outlined below and will receive training throughout the period of the project.

6 workers (post-MSc or post-graduate) for a period of 2 months each.

The precise timing of the training for these individuals is dependant on co-ordination with the Nepalese partners.

#### **Work Programme.**

- Workshop in Nepal to launch project (2 UK project staff for 1 week each in host country). **October 1997**
- Arrival of Nepalese co-ordinator at NHM. **October 1997.**
- Establishment of structures for specimen and for literature databases. **By end of 1997**
- Establishment of protocols for image reference collection. **By end of 1997**
- Conversion of prime literature source (*The Enumeration of the Flowering Plants of Nepal*) into a database. **By April 1998**
- Setting up of Nepalese node at Tribhuvan University. **By April 1998**
- Investigation of type specimen holdings at UK institutes begins. **April 1998.**
- 1st project review meeting (involving NHM, Kew and Edinburgh contacts and Nepalese co-ordinator) to review progress. **May 1998.**
- Commencement of data capture. (This process continues throughout the life of the project). **June 1998.**
- Training of first group of Nepalese post-graduates. **June 1998**
- Training of second group of Nepalese post-graduates. **September 1998.**
- 2nd project review meeting (involving NHM, Kew and Edinburgh contacts and Nepalese co-ordinator) to review progress. **February 1999.**
- Training of third group of Nepalese post-graduates. **May 1999.**
- Finalisation of databases and image reference collection. **June 1999.**
- Return of co-ordinator to Nepal and handover of image reference collection and three databases to the Nepalese Government and University authorities. The databases are *The Enumeration of the Flowering Plants of Nepal*; Nepalese types and representative specimens in UK herbaria; Bibliography of floristic works relevant to Nepal. **August 1999.**
- Final workshop in Nepal (2 UK project staff for 1 week each) to publicise completion of the project and to launch the availability of the databases and reference collection. **September 1999.**

2.7 Give the proposed starting date and duration of the project.

Start of project: October 1997 for 2 years.

2.8 Is this a new project or the continuation of an existing one?

New project.

2.9 Do you know of any other individual/organisation carrying out similar work? Give the details of the work, explaining the similarities and differences.

No directly similar work is being carried out involving data on Nepalese plants. However, a comparable project (CANABIO) is currently being undertaken for data on Mexican birds and mammals. Some 93% of data for Mexican birds is held in foreign institutes and Mexican workers are visiting these institutes to record as much of this (and mammalian) data as possible for inclusion in databases being built up in Mexico. The NHM is one of the participating institutes in this world-wide project, indicating our commitment to, and experience of, data repatriation of this kind. The situation for Nepalese plant data is parallel to some extent; the main difference is the much smaller number of target institutes containing data.

### 3. MONITORING AND EVALUATION

Describe how progress on the project will be monitored and evaluated in terms of achieving its aims and objectives, both during the lifetime of the project and at its conclusion. How would you ensure that it achieves value for money? What arrangements will be made for disseminating results? If applicable, how will you seek the views of clients/customers?

The project will be monitored in several ways.

Continuously by

- i) supervision by experienced NHM staff under the project leader (Mr J.R. Press).
- ii) testing systems and evaluating data via the Nepalese node at Tribhuvan University.

At intervals via

- iii) The NHM's internal project assessment system (linked to staff reporting and forward job planning).
- iv) the project's in-built progress review meetings
- v) the Darwin Initiative's own reporting procedure
- vi) workshops, especially the final one where evaluation of the completed programme will be made.

All expenditure will be controlled by the project leader and subject to The NHM's financial control procedures. After start-up, money will be paid against results achieved.

The availability of the electronic resources produced will be advertised on the internet and via relevant national and international publications cataloguing institutional holdings such as Index Herbariorum.

The views of clients will be gathered via responses to regular reports to Nepalese partners and to test results from the Nepalese node; from invitees to workshops and via internet response.

#### 4. INCOME

4.1 What financial support from public sources (Government Department or Agency) does the organisation as a whole receive at present, and from which organisations? What percentage is this of the organisation's total income?

In the previous financial year, 95/96, The NHM received £28.79 million grant-in-aid from the Department of National Heritage and, in the same period, non-exchequer income self-generated by the NHM totalled an additional £14.3 million. The sum total represents 33% of the Museum's total income.

4.2 Please give details of grant you have sought from other public sources for this project.

None.

4.3 Please state other sources of income and amounts to be put towards the costs of the project (including any income from private sponsorship, trusts, fees or trading activity). Include donations in kind e.g. accommodation. Indicate any income or donations which are confirmed.



4.4 Briefly describe the arrangements envisaged for meeting the costs of continuing your project beyond any period of Darwin Initiative funding, if appropriate. A clear exit strategy must be provided.

The project will be completed within the specified period. Links will continue via existing specimen exchange systems with The NHM and under the aegis of the proposed *Flora of Nepal* project. The NHM's own long term interest in constructing and maintaining specimen databases is core funded and will continue.

## 6. CERTIFICATION

On behalf of the trustees/company (delete as appropriate) ...The Natural History Museum..... I apply for a grant of £126413..... in respect of expenditure to be incurred in the financial year ending 31 March 1998 on the activities specified in paragraph 2.6.

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 enclose a copy of the organisation's most recent audited accounts and annual report.

Name (block capitals) J.R. PRESS.....

Position in the organisation ..Researcher (Higher Plants) .....

Signed ..... Date 26.11.96.....

Please return completed form to the Department of the Environment, A304 Romney House, Marsham Street, London SW1P 3PY.

Department of the Environment  
September 1996

**1996/97 DARWIN ROUND: PROJECT SUMMARY**

Ref. (DOE use):

**Project name, including collaborating country/ies (not more than 10 words):**

PLANT INFORMATION AND TECHNOLOGY TRANSFER FOR NEPAL

**Name of organisation/individual and project leader:** The Natural History Museum. Project Leader: Mr J.R. Press**No. of people involved:** UK - 4                      Host country/ies - 7

**Need for project:** Important reference data in the form of type and other representative specimens and literature for Nepalese plants are requested now by Nepalese scientists to carry out almost all of the botanical and biodiversity work they have planned. The main information resources reside in the UK. The transfer of these resources is a necessary first step in enabling a range of studies to go ahead.

**Objectives:**

The main objective is to transfer vital information on vascular plants and bryophytes in Nepal by:-

- i. repatriating data on types, historical and other important collections as high-quality electronic images and hard copy.
- ii. making available existing baseline data to Nepal by converting the *Enumeration of the Flowering Plants of Nepal* (published by the Museum in the 1970s and 1980s) into a database format.
- iii. facilitating further studies by providing a bibliography of works covering or including Nepalese taxa which post-date the *Enumeration*.
- iv. providing a core of Nepalese workers trained in capturing specimen data.

**Work programme:**

Launch workshop

Establishment of database structures and protocols: set up of Nepalese node

Production of baseline data set

Data and image capture for specimens, concurrent with literature survey

Training of Nepalese collaborators throughout life of project

Handover of finalised data sets and completion workshop

**Outputs, including legacy in place when Darwin funding ceases :**

CD-ROM image reference collection.

Baseline floristic data for Nepal (database)

Nepalese types and other representative specimens in UK herbaria (database)

Bibliography of floristic works relevant to Nepal (database)

Core of Nepalese workers trained in specimen data capture and information handling

**Timetable (eg May 1996 for 3 years):** October 1997 for 2 years**Monitoring & evaluation:**

Via supervision of experienced NHM staff; NHM's project assessment system; project review meetings; testing via Nepalese node; workshops.

**Darwin funding requested:** 97/98 £28165                      98/99 £61000                      99/2000 £37248                      Total £126413**Any matching funding arrangements?:** No**Comments:**

## **APPENDIX I: Job titles and duties.**

Mr J. R. Press (Researcher, Band 3) responsible for general project management, training, database design, supervision of all data capture and imaging, conversion of baseline data into database form, evaluation and adherence to deadlines.

Prof. S. Blackmore (Head of Department, Band 1) responsible for co-ordination between institutes, workshops, monitoring of progress.

Mr N. Turland (Researcher, Band 5) responsible for supervising typification of specimens, dissemination of information via the internet.

Curator (Band 5) responsible for support and supervision of work within the herbarium collections.

Nepalese co-ordinator (Darwin Fellow in the Department of Botany) responsible for database design, data and image capture, evaluation and monitoring both in UK and via Nepalese node, some training.

Nepalese trainees (Darwin Scholars in the Department of Botany) responsible for data and image capture.

## **APPENDIX II**

Letters of support from the following are attached:-

Head of the Central Department of Botany, Tribhuvan University, Kathmandu  
Director of Missouri Botanical garden, St Louis, Missouri