**DARWIN INITIATIVE FOR THE SURVIVAL OF SPECIES**

**APPLICATION FOR GRANT**

Please read the accompanying 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 except where this is invited on the form. The space provided indicates the level of detail required but you may provide additional information on a separate sheet if necessary. Copies of this form are available on disk on request. 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

Centre for Tropical Coastal Management Studies

1.2 Address for correspondence

[redacted]

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

Dr Susan Clark

1.4 Telephone and FAX numbers

[redacted]

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

Academic Institution

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

Aims:

The Centre's aims are: (i) to carry out high quality research in tropical coastal management; (ii) to provide advanced training courses for coastal managers; and (iii) to provide an information centre for coastal management issues.

Activities:

(i) The Centre has offered an MSc course in Tropical Coastal Management since 1987. It has been attended by between 9 and 24 students per year, the large majority of whom have been from overseas. There is now a network of alumni throughout the tropics. The Centre has also offered short courses to meet the demands of particular countries.

(ii) Staff are involved in research in developing countries throughout the world, especially in SE Asia, the Indian Ocean, the South Pacific, the Caribbean and West Africa.

(iii) Academic Links. The Centre has formal links with universities or research institutes in Thailand, Ghana, Indonesia, Philippines and Malaysia and many informal links.

Structure (enclose chart if appropriate):

The Centre is part of the Department of Marine Sciences and Coastal Management in the Faculty of Agriculture and Biological Sciences at the University of Newcastle upon Tyne.

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.)

Dr Clark has over 10 years experience in diverse aquatic ecosystems including; West Africa, Maldives, Caribbean, Indonesia and the Red Sea. Her recent research has focused on research under-pinning development, with particular reference to tropical coastal management issues. Work experience and accomplishments directly relevant to this project include: acting as Project Co-ordinator (1995-1996) for a multi-disciplinary study to promote strategies for integrated management of aquatic and terrestrial resources (and human activities) in the coastal zone of Ghana. The project which was funded by the UK/DfID Natural Resources Systems Programmed Land/Water Interface project collaborated with a wide range of Ghanaian institutions including: the University of Ghana, the Department of Game and Wildlife and the Environment Protection Agency. She is currently involved in a follow up project to investigate participatory approaches to coastal zone management in Ghana.

The UK staff who will be involved in the project have substantial experience in West Africa, especially in Ghana, gained in part through the academic link with the Department of Oceanography and Fisheries at the University of Ghana. We also have strong links throughout the whole of the Sub-region developed primarily during a Seminar held in Accra in March 1996. The *Proceedings* have been published as : S.M. Evans, C.J. Vanderpuye and A K Armah (editors) (1997) *The Coastal Zone of West Africa: Problems and Management*. Penshaw Press, Sunderland, 246pp. ISBN 0 9530867 0 X

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

No (although staff from the Museum and PML have been awarded grants).

1.9 How did you learn about this Initiative?

Its wide publicity and colleagues.

1.10 Geographical coverage of the organisation as a whole.

The University operates on an international basis.

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 Centre for Tropical Coastal Management Studies was established in the Department of Zoology in 1987 to serve as a focus for teaching of a new interdisciplinary MSc in Tropical Coastal Management and for interdisciplinary research and consultancy activities in the same field. Training has primarily focused on the MSc/Diploma programme which has seen 115 students from 34 countries graduate. Increasing numbers of overseas MPhil and PhD students are registering in the Department on graduation from the MSc/Diploma programme. The Centre's overseas research links have also attracted foreign students to Newcastle BSc programmes both in MSCM and other departments. In total over [redacted] in fees have been attracted to the University. Strategic research into the science and under-pinning coastal management has been well-funded, primarily by the DfID who have provided about [redacted] of the *c.* [redacted] in outside research funding attracted by the Centre staff since 1986. Staff in the Centre have co-authored over 100 scientific publications.

## 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 How has the need for the work been identified? How is the project related to conservation priorities in the host country(ies)? How is the project intended to assist the host country with its obligations under the Biodiversity Convention?

The Project is capacity building in the field of marine science. It will create and strengthen links between local and national institutions to enable them to carry out comprehensive audits of their own biological resources. These are needed to fulfil their countries' obligations under 'The Biodiversity Convention'. The Convention requires all signaturees to develop a national strategy for the protection and sustainable development of its natural resources.

The need to build the capacity for marine biodiversity research and audit was recognised by the participants at the International Seminar *The Coastal Zone of West Africa: Problems and Management*, and endorsed by resolutions published in the Proceedings (see above). These strssed the need for regional universities to pool their resources and expertise, to upgrade their undergraduate teaching, for West African nations to base future ICZM policies on sound scientific bases and the requirement for inventories of marine biological resources. The project will address these resolutions by creating networks of trained researchers who employ fully comparable methods. Subsequent to the meeting, there have been extensive discussions with Professor C. J. Vanderpuye (Project Coordinator) who, as Commissioner for Fisheries and Chair of the Marine Science Research Committee, has a leading role on setting the agenda for marine research in Ghana.

2.2 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 Project will assist West African countries which are rich in marine biodiversity and depend heavily on its sustainable use, in the following ways:

(i) The Project will act as a catalyst by bringing together world class experts from three UK institutes (Dove Marine Laboratory, Plymouth Marine Laboratory and Natural History Museum) with scientists from universities throughout the West African sub-region. This will lead to joint exercises in cataloguing and mapping marine biodiversity.

(ii) It will promote general awareness and understanding of biodiversity, conservation and management to successive generations of West African undergraduates.

(iii) It will ensure that future coastal zone management planning is based on sound scientific principles.

(iv) It will enable countries in the Sub-region to fulfil their obligations under the Biodiversity Convention.

(v) It will be value for money because of the multiplier effects of training the trainers (ie. training university scientists who will train successive generations of undergraduates).

(vi) It will be a high profile British-West African initiative.

(vii) It responds to a priority need recognised at a Sub-regional workshop and is the product of a long partnership between the universities of Ghana and Newcastle.

(viii) By providing a regional capacity to undertake environmental audit, the Project enables the countries to implement ICZM and thereby help to resolve conflicts between the use of the sea as a source of food (60% of Ghana's protein has a marine origin) and its use as a receptable of urban and industrial waste. Marine pollution could have a mjaor impact on the health and prosperity of all the countries in the region.

The Project will use the name and logo of the Darwin Initiative in its title, and will display it prominently on all materials and at public presentations.

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

1 September 1998 for three years.

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

The overall purpose is to capacity build, enabling West African countries to undertake assessment of the current status of their coasts in terms of their biodiversity. This will provide them with the strategic capacity to exploit and manage resources efficiently, thereby alleviating poverty in future generations of coastal communities.

Specific objectives:

(i) Train experts from within the region to identify, catalogue and map marine biodiversity.

(ii) Initiate a network of collaborating scientists in west Africa and link this to recognised specialist institutions in UK.

(iii) Collate and distribute information on West african marine biodiversity in a form which will facilitate future research and form a basis for graduate and undergraduate training in the years to come.

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

**Marine Biodiversity Capacity Building in the West Africa Sub-region.**

Degradation of coastal habitats in West Africa is severe and includes: erosion, overexploitation of fish resources, loss and changes in coastal vegetation and pollution from industrial and urban wastes. The problems are common to most, probably all, countries in the Sub-region but there has been little attempt for scientists to collaborate in efforts to solve them. In this regard therefore the international seminar *The Coastal Zone of West Africa: Problems and Management* provided a unique opportunity to develop new research and teaching programmes. It was held in the British Council offices in Accra, Ghana, in March 1996, and was attended by some 150 delegates, representing 10 West African countries and 8 countries from outside the Sub-region. It was recognised that the region's rich marine biodiversity is threatened before it has been properly mapped and documented. The current project arises from recommendations which were made at the final discussion session of the meeting and endorsed by all the delegates. Three problems will be addressed: (i) the need for scientists from West African countries to collaborate in sharing their skills, knowledge, experience and facilities; (ii) the need to assess living marine resources by mapping and cataloguing them; and (iii) the need to develop undergraduate teaching programmes in systematics, taxonomy and biodiversity.

The proposed programme of work:

(i) Creating a **Network** linking scientists, government officials and all of those with interests in marine biodiversity and the exploitation of marine living resources in West Africa. Its main function will be to encourage communication. A twice-yearly newsletter will be produced. This will help people to make contact with one another and stimulate the exchange of information (e.g. by providing a directory of research institutions, including e-mail addresses), give information about developments in marine sciences/coastal management on a country-by-country basis, and encourage international collaboration, such as in research, workshops or seminars. It will be edited by the Project Coordinators with help from a representative from each West African country.

(ii) Currently there is an absence of scientists in the Sub-region who have the requisite skills and knowledge to identify, catalogue and map marine living resources. This problem will be addressed by offering one-year **Darwin Fellowships** to five young, but established and high quality scientists. Each fellow will work either on the taxonomy and systematics of one or more major groups of marine organisms or on biotope mapping. They will be linked with experts as follows: 1. Macroalgae (Dr. D.M.John, British Museum of Natural History); 2. Benthos (Mr. M.A.Kendall, Plymouth Marine Laboratory); 3. Zooplankton (Dr. C.L.J.Frid, Dove Marine Laboratory); 4. Fish (Dr. A.J.Edwards, Newcastle University); 5. Biotope Mapping (Dr.R.L.Foster-Smith/Dr.J.L.Foster-Smith, Newcastle University). Each fellow will spend 3-4 months working with the expert in the UK, learning appropriate skills, carrying out literature searches, working on existing collections. Each fellow/expert pair will also work together in West Africa for a month, initiating the programme of field work. All fellows will be encouraged to liaise closely with other scientists in the region (and elsewhere), making initial contact through the network, so that they can gain access to existing collections, maps or information. The fellowships will be advertised through the network Those selected will be experienced graduates who hold a permanent position in a regional university or research institute. They will be expected to be accomplished in written and spoken English. Each of the experts has worked in West Africa, is an acknowledged authority and is on the leading edge of the relevant field of study in the UK.

iii) The knowledge and skills acquired by the fellows will also be adapted for teaching purposes in order to develop courses in marine biodiversity in West African universities. The fellows and experts, in collaboration with the Project Coordinators, will lead the **Darwin Advanced Training Workshop on Marine Biodiversity of the West African Sub-region.** It will be for 15 university lecturers from throughout the Sub-region. Each will be awarded a bursary to cover travel and subistence costs. Teaching materials, including manuals for identification and biotope mapping, which have been prepared by Darwin fellows, will be presented at it. It will be 14 to 21 days long and will be organised through the network. The workshop will also provide the opportunity to develop collaborative research. Fellows will be expected to develop plans for further mapping or taxonomic studies.

Outputs (codes in brackets): (5) 5 Darwin fellows to receive advanced training; (6A and B) advanced training workshop for 15 lecturers; (7) teaching packs and identification manuals; (8) approx. 40 weeks in West Africa for 5 experts; (10) 3 field guides and 1 manual on field survey techniques; (12) 3 computer-based databases handed over; (13) 3 species reference collections handed over; (15A) 3 - 4 press releases depending on locations of country's of origin of fellows; (16A) 6 newsletters, total circulation about 150; (17A) one West African network of scientists; (18/19) unknown but probably 2 or 3 radio or TV interviews.

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

This is a new project.

2.7 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? How will trainee outcomes/destinations be monitored after the end of the training?

The following elements of training are included:

(a) One year's training for each of 5 Darwin Fellows. They will spend 3-4 months in the UK in which they will: (i) attend (as a group) a one week workshop on biotope mapping and cataloguing marine resources; (ii) receive individual training working in collaboration with a UK expert on either a particular taxonomic group or field survey techniques; (iii) carry out field surveys in West Africa; and (iv) develop teaching materials for use in West African universities.

(b) A Darwin Advanced Workshop on the Marine Biodiversity of the West African region. This will be for 15 university lecturers, and will facilitate the introduction of courses on marine biodiversity into West African universities. It will last for 14-21 days.

2.8 [If applicable] How is the research element of the project to be disseminated?

The findings will be disseminated as follows:

(i) Advanced training workshop.
(ii) Through peer reviewed papers in the scientific literature and papers given at scientific meetings,
(iii) Articles/interviews in West African newspapers, radio and TV.
(iv) The establishment of a communication network for West African scientists.
(v) The publication of two newsletters a year through the network.
(vi) Publication and distribution of identification manuals and other teaching materials.

2.9 How is the work of the project expected to continue after the end of grant period? A clear exit strategy must be included.

It is essential that the capacity built in this Project will be utilised to develop further teaching and research programmes. The network must be maintained and integrated plans developed to assess marine biodiversity in the sub-region as a whole. There will be a final round-up workshop to develop new proposals. Coordination of the project will then be taken over by the University of Ghana. The Head of the Department of Oceanography and Fisheries there , Professor C.J. Vanderpuye, is in a strong position to lead it in the next phase. He is currently Chairman of the Ghana Government's Fisheries Commission and of its Fisheries Research Board. He will seek funding from international sources, such as EU and World Bank. We are aiming towards environmental protection within the context of regionally integrated ICZM. We would expect the Darwin Fellows to present their findings to environmental and fisheries protection legislators within their own country and urge them to employ modern methods of monitoring based on the skills developed during the Project.

2.10 Which overseas institutions, if any, will be involved in the project? Please explain the responsibilities of these institutions and provide details on the individuals who will be involved in the project.

UK.Coordinator Dr Susan Clark (Newcastle University), with support from Dr Stewart Evans (Coordinator of the existing British Council Newcastle-Ghana Link).

West Africa: Coordiantor Professor C.J. Vanderpuye (University of Ghana). In practice he will delegate some responsibilities to Mr A.K. Armah (Lecturer in the Department of Oceanography and Fisheries).

Participation will be open to all countries in the Sub-region. Principal countries include: Ghana, Côte d'Ivoire, Nigeria, Cameroon, Gabon, Gambia, Sierra Leone and Senegal.

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

The UNDP Large Marine Ecosystem project is involved in assessing offshore marine resources in the Gulf of Guinea.

There is also the World Bank Coastal Management Wetlands project which is designed to assist the Government and people of Ghana to manage wetlands.

Our project is complementary to them, and in practice there will of little or no overlap. Our approach is to build capacity and leave a legacy of enabling technology so that West African scientists can assess and manage marine living resources without outside help. Our emphasis is therefore on transferring skills and expertise to future generations of West African scientists, as well as those who are currently in post.

## 3. MONITORING AND EVALUATION

Describe how progress on the project would 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 would you seek the views of clients/customers?

A Management Committee with representatives from the principal collaborating institutes will monitor and evaluate the Project. It will be judged on its ability to produce the outputs described in 2.5 above.

There will be a round-up workshop for the Management Committee (attended by the Coordinators and 2 UK experts) to: (i) evaluate its success; and (ii) develop plans for further collaborative work.

The project will be good value for money because of the multiplier effect of training the trainers (lecturers). Successive generations of undergraduates will benefit from it.

## 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?

The University receives Government HEFC funding and substantial income from bodies, such as Research Councils, charitable trusts and international organisations.

4.2 Please give details of resources you have sought from the host country partner institution(s).

None

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

Support for the Project will be forthcoming from senior staff of the Natural History Museum (Dr David John) (plus access to the British national collections of natural history specimens and literature), and from the Plymouth Marine Laboratory (Mr Mike Kendall). The University of Ghana will provide facilities for the project, as will other West African universities (as yet unidentified).

## 5. EXPENDITURE

5.1 Please state gross expenditure on the programme of work (see 2.6). Please work by financial year (defined as April to March), using 1998/99 prices throughout - do not include any allowance for assumed future inflation. Indicate salary costs on Table A and total costs on Table B. For programmes of less than 3 years' duration, enter 'nil' as appropriate for future years. It would be helpful to highlight the areas for which Darwin funding is requested.

Table A

| | 1998/1999 | 1999/2000 | 2000/2001 |
|---|---|---|---|
| Number of Staff - list each member.<br>(5 from the following)<br><br>a) UK<br>Dr D.M. John[1]<br>Mr M.A. Kendall[1]<br>Dr C.L.J Frid[1]<br>Dr R.L. (or J.L.) Foster-Smith[1]<br>Dr A.J. Edwards[1]<br>Dr S. Clark (Coordinator)[2]<br><br>b) collaborators<br>Prof. C.J. Vanderpuye[2]<br>Mr A.K. Armah (Coordinator)[2] | [redacted] | | |
| Job titles and duties<br>1. Expert<br>2. Coordinator | | | |
| % of time each would spend on this work | 1 = 15%<br>2 = 20% | ½ = 20% | ½ =20% |
| Cost of this work | [redacted] | | |

Expenditure on other costs and then the total costs should be listed as below:

Table B

| | 1998/1999 | 1999/2000 | 2000/2001 |
|---|---|---|---|
| Rents, rates, heating, lighting, cleaning | | | |
| Postage, telephone and stationery<br>Coordinators' UK and Ghana inc. visits | | | |
| Travel and subsistence: 5 UK experts to Ghana @ | | | |
| Printing: Final publication @;<br>Newsletter @ | | | |
| Conferences, seminars etc: 15 bursaries @ ); 5 fellows expenses @ 4 UK experts @; running costs 2 UK experts to round-up workshop @ | | | |
| Capital items, (please specify)<br>Computers. Cameras for 5fellows @ | | | |
| Other (please specify)<br>5 fellowships (travel and subsistence) @<br>5 x teaching materials @ | | | |
| **Sub-total** | | | |
| Cost of salaries (from previous table) | | | |
| **Total of spend*** | | | |

* Grants may be limited to a percentage of the total cost of the project. The Department will look for balancing income from non-public sources (eg. private sector funding, subscriptions, donations, fees).

5.2 Please deduct any confirmed income or donations from elsewhere (where this may be costed) and indicate in Table C the amounts of grant requested under the Darwin Initiative.

Table C

| | 1998/1999 | 1999/2000 | 2000/2001 |
|---|---|---|---|
| Income to be deducted | | | |
| Amount of Darwin Initiative funding requested | | | |

## 6. CERTIFICATION

On behalf of the trustees/company (delete as appropriate) UNIVERSITY OF NEWCASTLE UPON TYNE I apply for a grant of £216,540 in respect of expenditure to be incurred in the financial year ending 31 March 1999 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.

[redacted]

Please return completed form to the Department of the Environment, A504 Romney House, Marsham Street, London SW1P 3PY.

Department of the Environment
September 1997