

DARWIN INITIATIVE FOR THE SURVIVAL OF SPECIES : APPLICATION FOR GRANT FOR ROUND 9 COMPETITION

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 or by e-mail 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 beyond an A4 sheet (leaving the allocated space for DETR comments to be made) as additional information will not be taken into account.

1. Name and address of organisation

EARTHWATCH INSTITUTE

2. Principals in project

Details	Project leader	Other UK personnel (if working more than 50% on project)	Main project partner or co-ordinator in host country
Surname	Laird		Underhill
Forename(s)	Julian		Les
Post held	Director of Programmes		Professor
Institution (if different to the above)			University of Cape Town
Department	Programmes Department		Avian Demography Unit
Telephone			
Fax			
Email			

Please provide a one page CV for each of these named individuals.

3. Project title (not exceeding 10 words)

CONSERVATION OF THE AFRICAN PENGUIN (SPHENISCUS DEMERSUS)

4. Abstract of study (in no more than 750 characters)

<p>THE PROJECT REPRESENTS A COLLABORATION BETWEEN EARTHWATCH, UNIVERSITY OF CAPE TOWN AND UNIVERSITY OF BRISTOL TO ENHANCE THE KNOWLEDGE BASE OF THE AFRICAN PENGUIN, IN ORDER TO AID ITS CONSERVATION, AND DEVELOP NEW TECHNOLOGY FOR PENGUIN MONITORING WITH POTENTIALLY GLOBAL IMPLICATIONS. THE PROJECT WILL COLLECT BASELINE DATA TO INFORM AND ESTABLISH A MONITORING PROGRAMME WHICH CAN BE CONTINUED BEYOND THE LIFE OF THE DARWIN GRANT. IN ORDER TO MONITOR THE EFFECTS OF OIL POLLUTION, A RESIGHTING PROGRAMME, OF BIRDS BANDED FOLLOWING THE TREASURE OIL SPILL IN JUNE 2000, WILL BE ESTABLISHED. THE PROJECT WILL FIELD TEST A NEW PLASTIC FLIPPER BAND WHICH, IF SUCCESSFUL, COULD BE USED FOR PENGUIN STUDIES WORLDWIDE, AND WILL ALSO DEVELOP MATERIALS WHICH WILL ASSIST LOCAL AUTHORITIES EXPLOIT THE PENGUIN COLONIES FOR TOURISM.</p>

5. Timing. Give the proposed starting date and duration of the project.

April 2001 – March 2004

6. Describe briefly the aims, activities and achievements of your organisation. (Please note that this should describe your unit, institute or department within a university.)

<p>Aims Earthwatch aims to support field research projects around the world, and to use these projects to promote conservation and sustainable development. Earthwatch also aims to provide professional development and environmental education activities through this network of projects, both internationally and in the UK.</p>
<p>Activities Earthwatch reviews and funds field research projects in the life, earth and human sciences. When a research proposal successfully passes peer review, the project is supported by the Earthwatch Volunteer Programme through the recruitment of volunteers who pay to act as scientists' assistants in the field. Earthwatch uses selected projects to provide field-based training to young scientists, NGO workers and national park staff.</p>
<p>Achievements In 1999, Earthwatch supported 140 projects in about 50 countries. Recent achievements of the organisation include:</p> <ul style="list-style-type: none">• recruiting over 1000 volunteers to participate in field research projects• providing over £750,000 in research grants to field projects across the world• raising over £445,000 of private sector income to fulfil exit strategies of previous Darwin projects in Africa• received, for the second time, a grant of approx. £1.3 million from the Millennium Commission to foster environmental volunteering in UK• working on a diverse range of business and biodiversity projects with the DETR.

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

<p>Earthwatch has received funding three times under the Darwin Initiative. The projects were entitled: <i>Biodiversity Research Training for African Park Staff</i>, <i>Capacity Building through the Wildlife Society of Zimbabwe</i>, and <i>Capacity Building Fellowships in Southern Africa</i>.</p>

8. Which overseas institutions, if any, will be involved in the project? Please explain the responsibilities of these institutions.

<p>The Avian Demography Unit (ADU) of the University of Cape Town is the South African partner organisation in this project. Building on the nucleus of the South African Bird Ringing Unit and the Southern African Bird Atlas Project, the ADU was established in the Department of Statistical Sciences, University of Cape Town, in December 1991. The ADU, always closely associated with BirdLife South Africa, entered into a formal partnership relationship with that organization during 1993 to foster the development of further ornithological projects. This close association is appropriate because the research of the ADU continues to focus on large scale demographic studies in which participation by amateurs is a vital element. This also makes the ADU a perfect partner organisation for Earthwatch. The ADU will manage the field work, and handle the logistics and local coordination. Although the University of Bristol will be involved in the flipper band tests, overall coordination of this aspect in the field will also rest with the ADU.</p>

PROJECT DETAILS

9. Define the purpose (main objective) of the project in line with the logical framework.

- The project will undertake penguin counts at offshore islands of the Western Cape in order to show trends from the earliest available count data. This will allow a long-term monitoring programme to be set up, based mainly on Robben island, which will ultimately be self-sustaining.
- The project will monitor the progress of penguins oiled by the sinking of the *Treasure* in June 2000 and establish a resighting programme of birds banded during the clean-up operation.
- The project will field test a new plastic flipper band which has the potential to replace the current bands used worldwide, which are thought may affect penguin survival rates.
- The project will develop tourism materials to assist the exploitation of the penguin colonies as tourist attractions.

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

This is a new partnership which will contribute to existing work by ADU on the African penguin. The development of the flipper bands is a new venture, highlighted as a priority by ADU for further penguin studies.

11. What is the evidence for a demand or need for the work? How is the project related to conservation priorities in the host country(ies)? How would the project assist the host country with its obligations under the Biodiversity Convention?

How was the work identified?

The African Penguin is classified by IUCN as Vulnerable and in Appendix II of the Convention for the Conservation of Migratory Species of Wild Animals (Bonn Convention). Recommendation 6.2 (Co-operative Action for Appendix II Species) of the 1999 Conference of the Parties of the Bonn Convention specifically listed the African Penguin as a species in need of co-operative action. Likewise, an IUCN-led *Spheniscus* workshop in Chile in September 2000 recommended that South Africa and Namibia produce a MoU for the African Penguin, into the creation of which the ADU will directly feed data from this research.

The total area available for nesting by African Penguins is less than 1000 ha (about 16 km²). There are only 14 colonies with more than 1000 adults. In 1910, there were probably 1.4 million adult birds at Dassen Island, and by the early 1990s, the world's wild population had decreased to about 180 000 adults, and the mean recent decrease per generation is 12.9 %. There is little evidence that the annual loss of birds has slowed as the population has decreased, and if the present loss (40 000 adults in the last 15 years) continues, extinction in the wild will occur within 70 years. The bird has therefore been made a priority for work by the Avian Demography Unit of the University of Cape Town.

Future trends in the overall population of African Penguins are difficult to predict, and the penguin's future is also vulnerable to catastrophic events such as the oil spill when the *Treasure* sank in June 2000. For example, a catastrophic oil spill in Algoa Bay could almost halve the world population. The proposal to create a port and heavy industrial complex near the St Croix group of islands will place the colonies there at high risk. It is therefore imperative to monitor the effects of the oil spill on the penguins, in order to understand better the strategies needed to cope with such disasters in future.

It is important to note that our ability to follow the fortunes of individual birds through banding is crucial to the success of such monitoring activities. However, given the uncertainties of the impact of the standard design of flipper band on penguin survival (in one extreme case it has been reported that the present design of metal bands can lead to an increase in energy use while swimming of over 20% in Adelie penguins and significantly reduce breeding success), there is a need for ongoing efforts to improve marking techniques for penguins. The project will therefore field-test the new design of plastic flipper band developed by Dr Peter Barham of the University of Bristol.

How is the project related to conservation priorities in the host country?

In South Africa, the African penguin is listed as endangered in terms of the Nature and Environmental Conservation Ordinance, No. 19 of 1974 of the Province of the Cape of Good Hope. This now applies to the Northern Cape, Western Cape and Eastern Cape Provinces. It is also listed as Vulnerable in the Red Data Book for South Africa, Lesotho and Swaziland. This project also addresses the following goals of the South African *Marine Living Resources Act 1998*:

- the need to conserve marine living resources for both present and future generations;
- the need to protect ecosystems as a whole, including species which are not targeted for exploitation;
- the need to preserve marine biodiversity.

Penguins have been shown to be important to South Africa's tourism economy. In 1999, for example, 359,035 people visited the Boulders colony on the Cape Peninsula. Most of the field work of this project will take place at Robben Island, which in 1999 was made a World Heritage Site. Although the island receives 500,000 visitors per year, tourism to the penguin colony there is in its infancy and the colony on Robben Island therefore has under-exploited potential as an ecotourism destination. The project will collaborate with Robben Island Museum to create tourism materials which encourage exploitation of this resource.

How will the project assist the host country meet its obligations under the Biodiversity Convention?

The project relates to Article 6 (Sustainable use - through tourism), Article 8 (In-situ conservation), Article 12 (Research and training), and Article 13 (Public education and awareness).

12 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 can be considered a Darwin project because it will **assist a country rich in biodiversity but poor in resources with the implementation of the Biodiversity Convention**. The project will draw on **British expertise** at Earthwatch and the University of Bristol, in **collaboration** with the University of Cape Town, to provide urgently needed data on the African penguin, implement measures towards its conservation, and develop new technology which will have global conservation implications. In this way it will be **innovative**, and the pedigree of the partners will ensure **scientific excellence**:

- Earthwatch is uniquely positioned to mobilise volunteers for a project which requires large numbers of people for observation and monitoring. Earthwatch supports projects around the world, and has vast experience of involving people in science and ensuring these projects achieve results.
- Professor Les Underhill was given the "Top Ten Conservationist of 1999 Award" by the Endangered Wildlife Trust of South Africa, and the citation notes that the Avian Demography Unit, of which Professor Underhill is Director, is responsible for innovative and ground-breaking ornithological studies and that he has made these studies available and accessible to both birders and conservation managers.
- Dr Peter Barham, of the University of Bristol, who is developing the new plastic flipper bands, is the holder of an honorary visiting Chair in Polymer Science at the University of Eindhoven and was awarded the 1999 Institute of Physics Prize for the Public Understanding of Science.

It can be seen from the above that the partners have a great deal of experience in communicating conservation and scientific messages to the public. The Darwin project would benefit from this experience, and would be advertised on materials produced by the project. It is anticipated that the subject (penguins) and the principal research site (Robben Island) will create media interest in the UK. Both ADU and Earthwatch have well-visited websites which would also advertise the project. The ADU's website ran inventive coverage of the oiled penguins over the summer, following the progress of three banded penguins' and recording 100,000 hits and widespread media coverage.

Earthwatch has been successful in the past in raising corporate funding (£445,000) to continue projects started with Darwin funding, and the appealing subject matter of this research makes that a realistic prospect again. The cofunding contributions from Earthwatch volunteers will ensure that the project will demonstrate **good value for money**. Importantly, the development of the volunteer component will ensure that the monitoring programme is sustainable in the long-term.

13. Set out the proposed timetable for the work, including the programme's measurable outputs using the attached list of output measures.

April 2001
Penguin counts at offshore islands of the Western Cape

July 2001

Report written on penguin counts

April - July 2001

Intensive monitoring of banded penguins

July 2001

Booklet on penguins produced for tourists

Ongoing throughout programme

Resighting programme in place (penguins banded during *Treasure* oil spill clean up)

November 2001

Report written on resightings of *Treasure* penguins

March - April 2002

Penguin counts at offshore islands of the Western Cape

July 2002

Report written on penguin counts

March - July 2002

Intensive monitoring of banded penguins (with modifications to bands if necessary)

July 2002

Conservation poster on penguins produced for tourists

November 2002

Report written on resightings of *Treasure* penguins

March - April 2003

Penguin counts at offshore islands of the Western Cape

July 2003

Report written on penguin counts

March - July 2003

Intensive monitoring of banded penguins (with modifications to bands if necessary)

July 2003

Leaflet on penguins produced for tourists

November 2003

Report written on resightings of *Treasure* penguins

OUTPUTS

4C/4D – Minimum total of 4 months work experience per year provided to 2 South African postgraduate students on field work

8 – 5 weeks spent by UK project staff on project work in host country

11B – Minimum of 3 papers annually submitted to peer-reviewed journals

12A – Resighting database to be enhanced

14B – Minimum 3 conferences attended per year at which findings will be presented

15A – One national press release in South Africa per year

15C – One national press release in UK per year

19A – One national radio interview in South Africa per year

19C – Two local radio interviews in Western Cape per year

23 - £43,625

A booklet, a poster and a leaflet for tourists will be produced about the African Penguin.

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

The ADU works in close partnership with all other institutions involved with penguin research: Marine and Coastal Management (central government), Western Cape Nature Conservation Board (provincial government), Southern African Foundation for the Conservation of Coastal Birds (NGO), Ministry of Fisheries and Marine Resources (Namibian government). The ADU takes the lead on matters relating to flipper banding, because it administers SAFRING (South African Bird Ringing Unit).

15. Will the project include training and development? Please indicate how many trainees will be involved, from which countries and what will be the criteria for selection. How will you measure the effectiveness of the training and will those trained then be able to train others? Where appropriate give the length of any training course.

The project will not provide training, but will provide work experience to masters and doctoral students at the University of Cape Town through their participation in the monitoring projects (4 months minimum per year). Beyond the work experience, the data collected is vital to their research.

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

Although training is not a formal component of the project, it should be noted that the provision of work experience to ADU students has a good track record. All graduates of the ADU are still involved in avian demography work internationally.

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

The monitoring programme will be continued with Earthwatch funding. When successful, there is no time limit to how long Earthwatch can continue supplying volunteers for a project, particularly in cases where the subject (penguins) and the location (Cape Town) are attractive to the public. The development of the flipper bands will be complete by the end of the project, and they will have been evaluated. If this evaluation is successful, they will be put into general use on African Penguins, and on other penguin species internationally. Success in this phase of the project will have a global impact on advancing penguin studies.

MONITORING AND EVALUATION

18. 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?

Earthwatch will monitor the success of the volunteer teams through forms completed by the volunteers and through site visits. The field work will be evaluated by regular reports produced by the project scientists, produced to deadlines set out in the project timetable.

The ADU has a remarkable track record of presentation of the results of its penguin monitoring activities, in journals, presentations at scientific conferences, in the general media, in specialist birding magazines and public talks. During the *Treasure* spill the ADU assumed an international profile in disseminating information. Given this track record, it is likely that similar dissemination of results will continue during the next three years.

19. Logical framework. Please enter the details of your project onto the matrix using the note at Annex B of the Guidance Note.

Project summary	Measurable indicators	Means of verification	Important assumptions
<p>Goal</p> <p>To assist countries rich in biodiversity but poor in resources with the conservation of biological diversity and implementation of the Biodiversity Convention</p>			
<p>Purpose</p> <p>The project will enhance the knowledge base of the African Penguin and establish a monitoring programme, in order to aid its conservation, and will develop new technology for penguin monitoring with potential global implications, as well as materials to help exploit the tourism potential of the bird.</p>	<p>Reports published from the field work and data available on African penguin numbers and trends.</p> <p>Success of new flipper bands.</p>	<p>Project reports.</p> <p>Project reports.</p>	<p>Political situation does not change unfavourably.</p> <p>Colonies under study are extant for duration of study.</p> <p>Political will exists to implement conservation recommendations.</p>
<p>Outputs</p> <p>Information from counts used to show trends from earliest available count data. Resighting programme in place. Results of resighting work analysed. Results of flipper band field tests analysed. Ecotourism materials produced and used.</p>	<p>Information from counts processed.</p> <p>Database is fully updated.</p> <p>Report written on resightings.</p> <p>Report written on flipper band testing.</p> <p>Ecotourism materials in place.</p>	<p>Reports from penguin counts.</p> <p>Project reports.</p> <p>Project reports.</p> <p>Project reports.</p> <p>Ecotourism materials available. Project reports.</p>	<p>Further catastrophic events (oil spills, fire) do not hamper field work.</p> <p>Earthwatch volunteers able to work in South Africa.</p> <p>Penguins remain attractive to tourists.</p>
<p>Activities</p> <p>Penguin counts undertaken at offshore islands of the Western Cape.</p> <p>Resighting work of <i>Treasure</i> (oiled) penguins.</p> <p>New flipper bands field tested.</p> <p>Ecotourism materials developed.</p>	<p>Results from counts available for processing.</p> <p>Results from resighting work available for databasing and analysing.</p> <p>Results from field tests available.</p> <p>Draft materials developed and approved by ADU.</p>	<p>Project reports.</p> <p>Project reports.</p> <p>Project reports.</p> <p>Ecotourism materials available. Project reports.</p>	<p>Earthwatch volunteers able to work in South Africa.</p> <p>Further catastrophic events do not hamper field work.</p>