

The Darwin Initiative

Sixth Report

Monitoring and Evaluation of Darwin Projects October 2003

Department for Environmental, Food and Rural Affairs

The Edinburgh Centre for Tropical Forests (ECTF) has continued its contract with Defra to undertake monitoring and evaluation of the Darwin Initiative at a project and programme level.

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Cover: Huemul Project Area: Raleigh international
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 Cover: Tree, Kenya: Royal Botanic Gardens, Kew.
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Annual reports

Darwin project leaders are required to submit an Annual Report by the end of April each year. These are produced according to guidelines and a specific format that can be downloaded from the Darwin website. At the start of their contract, ECTF revised the reporting requirements for both Annual and Final Reports. Annual Reports now provide concise information on: progress; partnerships; impact and sustainability; outputs, outcomes and dissemination; project expenditure; considerations for post-project funding; monitoring and evaluation and lessons learnt. Thus, ECTF advisers are able to make a more informed assessment of the project from the desk-study of reports.

During the 15 month period between January 2002 and March 2003 ECTF reviewers received a total of 46 Annual Reports, 39 of which were sent out for review. Of the reports received, two were received from projects that subsequently presented Final Reports that were reviewed. Five reports were submitted very late and it was considered inappropriate to review and provide feedback on such out of date information. It will be ensured that the next report is received on time and fully reviewed.

A summary of the project review is sent to the Project Leader to highlight main impressions, comments, suggestions and queries. Some queries require an immediate response but generally the issues raised by reviewers are dealt with, and reported on, in the following years report. In addition we are happy to receive follow-up communications from Project Leaders at any point during the life of the project. We have recently accepted ECTF's recommendations that full project report reviews should be sent to project leaders.

ECTF reviews of Annual Reports received in 2002 demonstrate that current Darwin projects are continuing to effectively address a wide range of biodiversity issues. A Summary Review of each current project is presented in Annex 1 of this report.

There are two areas of the review feedback system that could be improved. In some cases, there have been long delays between reporting and project leaders receiving feedback (which makes it difficult for projects to address any issues raised before the next Annual Report is due). A new process of identifying reviewers at the start of each project (thus making them aware of their commitments with regards to timing of reviews) should assist in addressing this. Occasionally ECTF reviewers have commented that there is little evidence from subsequent reports that their concerns have been addressed. We have accepted a recommendation from ECTF that reporting guidelines be revised to include a section requesting information on actions that have been taken in response to advisers' comments from the previous year. This would highlight where advisers' concerns have not been addressed and give Project Leaders the opportunity to flag any lack of, or late feedback from ECTF.

All Annual Reports we received this year were produced according to Darwin Reporting Guidelines. The quality was generally good and considerable care had been taken to include relevant information and attach all necessary project Outputs.

Logframes are now used by all new projects. Although initially greeted with a mixed reception, feedback to ECTF and the Darwin Seminar in 2001 suggests that most project leaders recognise the Logframe as a valuable project planning and monitoring tool.

Mid term reviews

During the reporting period, ECTF staff conducted a small number of overseas and UK-based mid-term reviews. The emphasis of this process is on monitoring and evaluation with constructive discussion between project staff and advisers on problems and potential methods of strengthening projects. Reviews take place around 12 months before the end of a three-year project, whilst there is still time to address any concerns raised. They are conducted by staff who have been involved in assessments of the project Annual Reports and who continue to provide feedback on the project to Defra and the Project Leader. Projects are selected to represent a wide range of project themes and size and different types of UK host institutions.

The aim of the Mid-Term Reviews are to assess progress against the project schedule; assess the likely impact of the project against the aims of the Darwin Initiative; recommend any necessary changes to project activities and budget for the final year of the project; and recommend any follow-up activities that would assist to achieve long-term sustainability of the achievements of the project.

Here follows a summary of the three mid-term reviews conducted this year:

Community-driven conservation and eco-tourism in the Mara ecosystem, Kenya (ref: 10/003)

Main Partners: Durrell Institute of Conservation and Ecology, University of Kent, UK with Olderkesii/Naikarra Community Conservation & Tourism Initiative, Kenya.

Background

In the Masai Mara there have been sustained declines in wildlife within the ecosystem over the past several decades. This is partly being driven by land transformation in the form of mechanised cultivation and small-scale subsistence agriculture. It is also driven by inequitable distribution of the benefits from ecotourism. Although tourism generates significant resources, the communities within the ecosystem are not seeing any benefits from tourism that would make wildlife conservation an economically viable form of land-use, and this devalues wildlife resources on their land. Moreover local people are suffering the direct costs of wildlife in the form of conflict without any compensation.

Project Objectives and Progress

The principal purpose of this project was to establish a centre that would serve both ecotourism and wildlife monitoring and to produce a strategy for mitigating human-wildlife conflict. Planned activities included: training two local co-ordinators to MSc level at DICE; training local scouts in improved wildlife and conflict monitoring; training local staff in tourism management; establishing a local wildlife association with resource planning responsibilities; producing a land use and resource utilisation strategy; and establishing a centre for ecotourism and wildlife monitoring. The project suffered unexpected and unforeseeable delays in implementing two components relating to the development of ecotourism. In response to this setback it conducted a comprehensive internal review. During the mid-term review mission, the revised set of Outputs and Milestones were finalised with the Project Officer. These amendments to the

project will assist the local community to investigate ecotourism options and to develop an ecotourism partnership.

General Assessment

The project has performed well under four of the six planned activities. These include two of the training elements of the project, the land use mapping element, and the establishment of a local wildlife association with resource planning responsibilities. Likely impacts of the next year of work are: i) the building of capacity within the community and the Kenyan Wildlife Service (KWS) to monitor and mitigate wildlife conflicts; and ii) facilitation of the community in planning tourism development and developing commercial partnerships, either through donor or private investments. All partners remain fully committed to ecotourism development and the revised programme should accommodate the needs of the local community and produce valuable outputs in the project's ecotourism components. The end result should be stronger community institutions and more sustainable conservation of wildlife.

Training of Vietnamese scientists in tree seed science (ref: 10/029)

Main Partners: The University of Reading with the University of Agriculture and Forestry, HoChiMinh City, Vietnam.

Background

Vietnam has lost around two thirds of its natural forest to decades of war, intensive exploitation, fire, and conversion to agriculture. In 1943 about 20 million ha. (44% of the country) was forested. This was reduced to 23% by 1983 and a total of 13 million hectares is currently classed as bare land (World Conservation Monitoring Centre, <http://www.wcmc.org.uk>). The country has established an ambitious forest planting programme that aims to increase forest cover to 40% by 2010. However, the current plantation strategy has resulted in the removal of areas of natural regeneration in favour of fast-growing timber species that are not well adapted to local conditions. Although the Vietnamese government are now attempting to promote reforestation using indigenous species, they have encountered problems of poor germination due to lack of knowledge of certain elements of tree seed ecology and physiology.

Reading University Seed Science Laboratory (SSL) was established in 1969 to pursue excellence in university teaching and research in applied seed science. Staff from the University with strong connections to Vietnam have conducted an assessment of training needs and provided seminars on Seed Science at the University of Agriculture and Forestry (UAF), HoChiMinh. This Darwin project was developed in order to assist in the country's reforestation programme by providing a cadre of trained staff to implement this policy.

Project Objectives and Progress

The overall objective of the project was to train Vietnamese scientists at the University of Agriculture and Forestry (UAF), HoChiMinh, Vietnam, in tree Seed Science for *ex situ* and *in situ* biodiversity

conservation. The project funded a two week workshop in Vietnam (26 participants) followed by a four month in-depth training programme for four of the participants, at Reading University. The trained scientists have since conducted research into seed storage behaviour and optimising environmental conditions for seed germination. In addition, project funds were allocated to establish a seed laboratory at UAF. A range of appropriate equipment has been purchased including deep freeze, electronic balance and an incubator. A new building is under construction that will house the new laboratory and solve the current restricted working conditions. A 45 hour post-graduate training module on Seed Science and Technology has been developed and will be taught to Masters students in November. Several publications and manuscripts have been produced, with more to follow. At the time of the review, the Vietnamese still required help to fully analyse data. The reviewer stressed that the training should not be delayed by more than a few weeks in order to ensure the manuscripts are completed by the end of this project (March 2003).

General Assessment

The project is nearing its conclusion and has been very successful. It has met the majority of its outputs and is likely to have a lasting impact on the Vietnamese people by training students in the science of seed technology and biodiversity conservation.



Four Darwin Trainees flanked by Dr. Ellis and Dr. Hong, University of Reading.

Conservation of the Paguyaman Forest in North Sulawesi, Indonesia (ref: 09/012)

Main Partners: Imperial College, London, UK with the National Research Institute, and Yayasan Adudu Nantu International (YANI), Indonesia

Background

The Paguyaman Forest is an area of 31,000 ha. of rainforest that has international recognition as an area of high biodiversity with many endemic, endangered species. It is one of the last strongholds of the babirusa pig in the world. A key feature of the remote and inaccessible site is a large natural salt-lick, which is one of the few places in the world where Sulawesi's endemic and remarkable large mammals can be readily observed. However, the site is gravely threatened by slash-and-burn clearance and illegal logging and the legally-protected babirusa is being hunted to extinction over an expanding area. This Darwin Project began in October 2000 with the overall purpose of contributing to the Indonesian national biodiversity action plan by implementing a management programme for the Paguyaman Forest Reserve.

Project Objectives and Progress

The objectives of the project are: to establish a functioning 31,000 hectare rain forest reserve; to establish a Darwin training centre at this site; to produce and implement management plans for the future protection and development of the reserve; to conduct internationally-recognised research on a wide range of endemic, endangered and economically important species within the reserve; to establish strictly controlled eco-tourism activities and other innovative income-generating activities at the reserve and ensure that these benefit local communities; to conduct public education campaigns; and to found a conservation NGO based at the reserve, to support and publicise the work and carry it on at the end of the Darwin funding.

The project has established a local NGO, Yayasan Adudu Nantu International (YANI) which now



8000 teak seedlings provided by the Darwin project have been planted by farmers in local communities on the boundary of the Paguyaman Forest Reserve.

co-ordinates activities relating to the site. In addition, the project has had a significant impact on the illegal trade in bush meat and timber resulting in legal proceedings against a number of traders. The project staff are working well with local communities to consider and address the development needs for areas outside the reserve. This work has included assisting local schools, training workshops and buffer zone development (planting of Teak seedlings). They have established an excellent working relationship with the new district (Kabupaten) government. As a result, the head of the Kabupate is proposing to upgrade the Reserve to National Park status and enlarge its area from 31 000 to over 100 000 ha.

General Assessment

The project is commended for establishing an excellent working relationship with local stakeholders and a strong sense of local ownership of the project. They have adopted an approach that has made it possible to adapt to opportunities and challenges resulting from the rapidly changing political economy

and landscape in Indonesia. The project has been very successful in raising the profile of the Paguyaman Forest Reserve and Darwin Initiative at local, regional, national and international levels. The most recent example has been the filming of material to be broadcast as part of a new BBC series "Mammals of the World" early in 2003. The establishment, protection and support of the Paguyaman Forest Reserve will achieve the project purpose of assisting Indonesia to meet its obligations under the Convention on Biological Diversity.

Final Reports

The Final Reporting requirement is for around 20-30 pages of information that specifically addresses the following key issues:

Scientific and Technical Methodology; Impact; Outputs; Expenditure; Project Operation and Partnerships; Monitoring, Evaluation and Lesson Learning; Partnerships; Darwin Identity; Leverage; Sustainability and Legacy; and Value for Money.

A total of 32 projects were completed during the year and Final Reports were submitted and reviewed for all of these. A summary of achievements of all completed projects is presented in Annex III and a summary of reviews of final reports in Annex IV.

The quality of the reports was generally good and a clear improvement on reports received at the beginning of the ECTF contract in 2000. In general, reports received during the year showed a notable improvement in the provision of information on methodology. Most projects provided clear and concise details that enabled reviewers to comment on the quality of their work. In many cases, considerable care and attention had gone into ensuring that we had received the required information and that all documents and Outputs had been delivered and approved.

Confidentiality of Reporting

The confidentiality of reports has been questioned by Project Leaders on a number of occasions during the year. This concern stems from a recognition of the increasing ease of wider information communication (e.g. through the world-wide web) and the fact that these documents contain potentially valuable information for the wider scientific and conservation community. Nevertheless, the prime objective of reports are to inform Defra on project progress. The Programme has created an environment where honest discussion of problems and potential solutions with the Secretariat and ECTF has become a strength of the Darwin Initiative. In many cases, resulting changes have made a significant contribution to project quality. We therefore intend to continue with confidential reporting and keep this distinct from information requirements that will be made publicly available.

Annex I Summaries of current project annual reviews

Reference & Project	Project Summary	General Assessment
<p>7/055 Biodiversity in the basement of the food web</p> <p>Royal Geographic Society/Shoals of Capricorn</p>	<p>The Project aims to provide training to host nation stakeholders in Mauritius and Seychelles. The training will provide the capability to monitor zooplankton populations which have been virtually unstudied to date, despite their fundamental importance to food web dynamics, recruitment to communities, and oceanic carbon fluxes.</p>	<p>A focussed, training-based Project, that is providing two host nations with a valuable plankton monitoring capability that will assist them in meeting their Biodiversity Convention obligations. The Project team has expended considerable effort in ensuring project legacy, with exit strategies being integrated into activities at an early stage. The Project has already become strongly integrated into the environmental infrastructure that exists in Seychelles, and is progressing well towards the same goal in Mauritius.</p>
<p>8/038 Conservation of plant diversity in Western Cameroon</p> <p>Royal Botanic Garden Kew</p>	<p>The project is centred in Western Cameroon, an area shown to have the highest plant diversity in Tropical Africa. Through plant collections and staff training the project's main purpose is to assess plant diversity in W. Cameroon and to establish the National Herbarium in Yaounde as the national centre for plant diversity assessment.</p>	<p>The year 2001-2002 appears to have been mostly dedicated to gathering and analysing data, a time-consuming process. Even so, project staff have managed to exceed predicted outputs. The positive effects of the project over the past year are evident by the accumulation of knowledge being gathered and stored, the number of people that have received training and the enhancement of the W. Cameroon National Herbarium.</p>
<p>8/126 Fisheries management for biodiversity conservation in the Brazilian Amazon</p> <p>Imperial College London</p>	<p>The focus of this Project is the evaluation of current fishing practices in the Brazilian Amazon floodplain with the aim of generating appropriate management strategies that will preserve both the habitats and fauna that live within them. Production of workable management practices will have widespread socio-economic benefits for those directly involved in fishing and the associated regional economy.</p>	<p>The project appears to be well managed and is meeting most of the planned key milestones. A three month extension, granted to allow an additional economic survey, will enable the project to achieve its objectives. Collaboration between UK researchers and the host organisation is working well.</p>

Reference & Project	Project Summary	General Assessment
<p>8/204 Collection and Cataloguing Algae for the Natural History Museum, Oman</p> <p>HTS Consulting</p>	<p>The purpose of the project is to improve scientific understanding of the algal species diversity in the waters off Southern Oman and to raise awareness of the conservation value of this resource. Objectives include the establishment of parallel fully referenced algal collections and databases at the Oman Natural History Museum (ONHM) and the Natural History Museum, London, the publication of scientific papers, and the transfer of collection and curation knowledge to ONHM staff.</p>	<p>The project has broadly achieved its scientific aim of investigating and cataloguing the biodiversity of an area that was previously poorly known. However, some difficulties have been established with development of partnerships with the host country, which may affect the legacy of the project. These difficulties have been exacerbated by a change of management of the project but is hoped that most of the planned outputs will be achieved by the end of the handover phase.</p>
<p>8/214 Land snail diversity in Sri Lanka</p> <p>Natural History Museum</p>	<p>The land snail fauna of Sri Lanka is diverse and highly endemic. The native snails are threatened by the rapid reduction in forest habitats and the spread of non-native snails. The project's basic purpose is to transfer skills (in molluscan systematics) to Sri Lanka and to enhance the resources (e.g. computerised database, reference collections, field guides) of Peradeniya University.</p>	<p>In general the project is producing excellent scientific results and it is succeeding in its overall purpose of transferring skills and resources in biodiversity assessment. The production of two field guides will provide a valuable resource for future work on the land snail fauna. The project faces a challenge in dealing with the exceptional amount of new material that it is discovering and needs to work out fully how it will respond to these new demands.</p>
<p>9/002 Effective management for biodiversity conservation on Sri Lankan coastal wetlands</p> <p>University of Portsmouth</p>	<p>The project shall provide needed methods and guidelines to estimate the relationship between human and wetlands ecosystems, the socio-economic carrying capacities of the ecosystems and to measure the human impact on wetlands ecosystems due to the use of the mangrove and fish resources. Improved economic valuation of wetland ecosystem resources should ensure the effective management for biodiversity conservation in Sri Lankan coastal wetlands.</p>	<p>Extensive field surveys appear to have increased knowledge, enabled testing of methodologies, and could provide basis for the development of guidelines and indicators for economic valuation of wetlands. Sri Lankan researchers have strengthened their research skills.</p> <p>This is an ambitious project and the final reports will have to confirm whether all objectives and outcomes have been realised and contribute to stated aims. Project leaders have been given advice on how reporting could be strengthened.</p>

Reference & Project	Project Summary	General Assessment
<p>9/005 Whale sharks and reef fish spawning aggregations research and conservation in Belize</p> <p>University of York</p>	<p>This project aims to study the biology and ecology of whale sharks and their interactions with reef fish that aggregate to spawn on a reef promontory, Gladden Spit, on the coast of Belize. In addition, the project proposes to investigate the economic costs and benefits of whale shark tourism, to determine whether it is a viable alternative to commercial fishing. The work will assess the effect and impact that this new branch of tourism has on whale shark behaviour. The project also plans to provide training in a number of areas, including the development of guidelines to protect migratory species such as whale sharks.</p>	<p>Owing to a number of set-backs, including a natural disaster in the form of hurricane 'Iris' and withdrawal of a former partner, this project has not made as much progress in its second year as would have been expected. Some aspects of the research are producing favourable results (e.g. satellite tracking) and the project is succeeding well in raising the profile of Gladden Spit and in publicising the Whale Shark presence. Project leaders have been given advice on how to strengthen reporting by providing more detailed information on surveys and training outputs.</p>
<p>9/007 Schools and Communities Monitoring and Protecting Biodiversity in Slovakia</p> <p>Field Studies Council</p>	<p>The purpose of the project is to increase awareness, knowledge, understanding and the protecting of biodiversity in Slovakia. This will be achieved through involving school students, families and communities in monitoring biodiversity, creating a series of national biodiversity databases and undertaking small scale biodiversity projects.</p>	<p>The project team has done well to achieve most of the second year goals and manage the production and dissemination of the results of the biodiversity survey. The quality of the data collected demonstrates the quality and effectiveness of the training provided. The project has great potential for use elsewhere in Europe in raising levels of awareness of biodiversity issues. Collaboration within the project is effective and suggests scope for future funding support once Darwin funding ends next year.</p>
<p>9/012 Conservation of the Paguyaman Forest in North Sulawesi, Indonesia</p> <p>Imperial College London</p>	<p>The purpose of the project is to establish a 31,000 ha rain forest reserve in Sulawesi. The project will establish a training centre and assist in the development of a management plan for the reserve. The sustainability of this reserve will be ensured through the development of a management plan incorporating active participation of local people in management of the reserve.</p>	<p>The project is making good progress and should be able to achieve most of the projected objectives. In order to ensure sustainability of the initiative after external funding ceases the project has been encouraged to put more resources into developing an exit strategy linked to a local management plan for the reserve. Some management issues have been identified and advice given.</p>

Reference & Project	Project Summary	General Assessment
<p>9/013 Large Mammal conservation and sustainable resource use in the Khan Khenti Special Protected Area</p> <p>Macaulay Institute</p>	<p>The project aims to promote long-term survival and sustainable use of large mammal populations in the KKSPA. In order to achieve this, population sizes, densities and distributions of moose, red deer, roe deer, musk deer and wild boar must be determined using rigid scientific methods. Decision-making and implementation will involve local stakeholders including local park authorities, governing authorities and herders. Other benefits include scientific training of host researchers, training and resources for park's authorities/rangers, and assisting and developing environmental awareness amongst young people involved in data collection.</p>	<p>The project's original aims have had to be modified due to safety issues outside the control of the project leader and project responsibilities have been transferred from RI to MLURI, which is regarded as a beneficial development. The project has generated a valuable lecture series in ecology at the university and several smaller, satellite projects in the KKSPA, which benefit from UK expertise and resources. The project has also exposed a large number of young volunteers to environmental work in a culturally different context. Much effort has been put into forming cooperative agreements. However, progress towards development of population estimate methodology has been less encouraging and the project has been advised to adopt a more rigorous scientific approach.</p>
<p>9/014 Huemul ecology research for conservation planning Southern Chile</p> <p>Raleigh International</p>	<p>The huemul or southern Andean deer is a flagship species of the mountainous and forested habitats of Chile, principally in the southern Patagonian region. It is listed as endangered with a population size that has declined to under 1000 animals. This project brings together a coalition of Chilean and British institutions to investigate the ecology of the huemul with a view to understanding issues critical to its survival.</p>	<p>Difficulties with use of radio collars has affected overall performance. Alternative techniques to obtain information on seasonal use of habitats have been recommended. Is it unlikely that the project will achieve all its research objectives but it has done well to overcome the capture problems and provided that a major effort is now made with field surveys, these data in combination with the belated information on movements from collared animals, should still provide significant new information about huemul ecology. In addition, the programme of conservation and research work undertaken jointly by Raleigh International and CONAF stands to benefit biodiversity conservation in southern Chile.</p>

Reference & Project	Project Summary	General Assessment
<p>9/015 Big cat conservation and sustainable management in southern Africa</p> <p>Weru University of Oxford</p>	<p>The project's aim is to instigate a more sustainable approach to the management of big cat populations in southern Africa, which are exploited for photo-tourism and hunting tourism, activities that provide jobs and foreign currency in areas that are often financially poor. Lions are believed to be over-hunted and populations are in decline.</p>	<p>This project is in good hands and is going well in spite of the very difficult political situation. The results obtained show the study population to be in a worse than expected (i.e. a clearly unsustainable condition), fully justifying the whole project.</p>
<p>9/017 Tree Diversity and Agroforestry Development in the Peruvian Amazon</p> <p>Royal Botanic Garden Edinburgh</p>	<p>The purpose of the project is to carry out a taxonomic study of 150 tree species with economic potential which will assist in implementing effective conservation and sustainable use programmes. The objectives include preparing a web-based database of species collections, training Peruvian scientists repatriation of specimen data, capacity building and raising awareness of biodiversity issues.</p>	<p>Overall the project is going well. The only criticisms relate to the apparently low-level involvement of one of the participants. This should not affect the achievement of the project objectives, but they might be met more effectively if they were fully engaged.</p>
<p>9/018 Conservation of the endangered Jerdon's courser in India</p> <p>University of Reading</p>	<p>Jerdon's courser is one of India's most endangered birds and is IUCN listed. The project aims to identify the current population size and geographical distribution and determine the birds habitat requirements. The final output will be a Management Plan for conservation of this species</p>	<p>This project is developing well. Two methods for censusing the birds have been developed and further development of these techniques, to a level such that they can be left in the hands of the host country, should enable reliable assessment of the status of this species now and in the future.</p>
<p>9/019 Framework for monitoring invasive tree species in Ghana</p> <p>Naturebureau</p>	<p>The colonisation of forest, savannah and agricultural land by invasive tree species appears to be disrupting natural succession and contributing to loss of biodiversity. The project aims to develop a framework for monitoring the impact of invasive tree species on biodiversity in Ghana.</p>	<p>This project is a valuable attempt to investigate processes and perceptions of invasiveness in certain tree species in Ghana and should result in some interesting Outputs. However, field work time has been reduced by various difficulties and delays. Activities appear to be on track, but it remains to be seen whether objectives can be met within the two year period.</p>

Reference & Project	Project Summary	General Assessment
<p>9/020 Development of a monitoring and training unit for the World Heritage Sites of Democratic Republic of Congo</p> <p>Zoological Society of London</p>	<p>The Democratic Republic of Congo (DRC) is classed as one of the six most biologically diverse countries of the world but, despite the fact that the new government recognises the need to survey and manage its biodiversity, it lacks the necessary expertise to manage or conserve its biota. This project focuses on the country's five World Heritage Sites and aims to train employees at the World Heritage Sites in research, monitoring and training skills and basic standardised data-recording skills; and to analyse existing long-term datasets to address key issues in management and conservation biology.</p>	<p>The project is undertaking a vital conservation role in a difficult region of the world and has worked out an effective <i>modus operandi</i> based on its role as the provider of technical inputs in patrol-based monitoring and conservation training. The absence of site-based monitoring and training visits is a cause of concern and it is to be hoped that project staff will make at least one substantial visit to each site during the remaining period of the project.</p>
<p>10/001 Darwin Initiative Biodiversity Conservation in Cuba</p> <p>BioNet International</p>	<p>Cuba has the highest endemism in a region famed for biodiversity. It is unique among countries of similar GDP as there is an excellent infrastructure and high levels of education and health but resources are poor. Some sites are under growing pressure from tourism and need management plans in place. This project aims to computerise data on neglected groups of organisms and develop management plans for 15 reserves.</p>	<p>This project is proceeding well despite some problems caused by external factors (e.g. the international political situation and a hurricane in October 2001). Given that the project is at an early stage it is difficult to assess progress so far, but with the experience and evident enthusiasm of the Project Leader no particular problems are foreseen with successful completion of the project.</p>
<p>10/002 People and Plants – Training Darwin Mentors in India</p> <p>Botanic Gardens Conservation International</p>	<p>The project seeks to increase local awareness of the value of native flora and fauna and the importance of sustainable use, to strengthen grassroots support for conservation of Tamil Nadu's unique biodiversity. The project aims to develop the capacity of local primary teachers to deliver environmental education to children and to develop the Kodaikanal Botanic Gardens as a teaching resource and model for botanic gardens throughout Tamil Nadu.</p>	<p>The project has great potential value for increasing local support for biodiversity conservation and sustainable use. It has been difficult to assess the quality or impact of project activities and outputs and the project has been given advice on how to strengthen reporting. There are some concerns over sustainability of project outputs and the project itself has noted that sustainability is likely to be lower in the poorer state schools.</p>

Reference & Project	Project Summary	General Assessment
<p>10/003 Community-driven conservation and ecotourism in the Mara ecosystem, Kenya</p> <p>DICE University of Kent</p>	<p>This project aims to assist a community living adjacent to the Masai Mara National Reserve to develop sustainable utilisation of wildlife, including ecotourism, wildlife protection and human-wildlife conflict alleviation. The principal purpose of the project is to establish a centre that will serve both ecotourism and wildlife monitoring and to produce a strategy for mitigating human-wildlife conflict. The larger aim is to integrate international conservation and economic development sustainably by combining natural and social sciences in the design of measures that will help to conserve biological diversity.</p>	<p>The project has made a good start. It has established a constitution with the local community; enrolled both the project partner and an additional community member within the MSc programme; initiated training of Scouts on the ground; and developed a community-based monitoring programme. The project suffered an unexpected setback to development of ecotourism by the decision of the private tour operator to reconsider its programme of investment and expansion. However, the project has sought to overcome this and is considering ways to assist the local community to investigate alternative ecotourism options and to proceed with development of an ecotourism partnership.</p>
<p>10/005 Conservation of the African penguin (<i>Spheniscus demersus</i>)</p> <p>Earthwatch</p>	<p>This Project aims to improve knowledge about the conservation status of the African penguin <i>Spheniscus demersus</i>, classed as Vulnerable by the IUCN. There has been a long-term reduction in numbers, partly associated with reductions in their food supply. In June 2000, a large oil spill killed many penguins. The project will establish annual census activities and will develop an alternative wing band for marking penguins (the currently used type of band is thought to increase penguin mortality).</p>	<p>This Project represents an efficient matching of the different capabilities of the host country partner organisation with a UK organisation and addresses a clearly identified conservation problem. The host nation partner organisation lacked resources to adequately monitor the colonies, especially in the aftermath of the oil spill. This Project has supplied the required resources, and should establish a long term monitoring activity.</p>
<p>10/006 Propagation, Nursery and Establishment Protocols for Seychelles Endemic Plants</p> <p>Eden Project</p>	<p>The purpose of the project is to recover a number of endangered endemic plant species from the Seychelles. The project objective is to promote the understanding of the relationship between plants, people and resources and to encourage responsible management of these leading to a sustainable future.</p>	<p>This is a very good project that seems to be making good progress. The purpose, objectives and main activities have been well thought through and are entirely appropriate to the situation in the Seychelles. Project staff are highly capable and professional and have a clear understanding of what needs to be achieved and how it is to be done.</p>

Reference & Project	Project Summary	General Assessment
<p>10/007 Establishment of Penguin Monitoring Programme in Chile</p> <p>Environmental Research Unit</p>	<p>The aim of this project is to establish a monitoring programme for globally important Magellanic penguins in Chile in order to determine population trends and human impacts. Key objectives are a baseline survey of the reserve's flora and fauna, establishment of a penguin monitoring programme, training for wardens, production of an NNR management plan and raising public awareness of penguin conservation in Chile.</p>	<p>Major targets for the first year have been largely achieved, notably baseline fauna and flora survey, survey of the Magellanic penguin population, monitoring of key aspects of penguin breeding cycle and training of local wardens in penguin monitoring methods. The project has been given advice on how to strengthen reporting and to address some specific concerns about data analysis and eventual ownership of the project.</p>
<p>10/009 Research, Survey and Biodiversity Planning on the Tibet-Qinghai Plateau, China</p> <p>Fauna & Flora International</p>	<p>The Qinghai-Tibet Plateau is a 'hot-spot' for endemic animals and plants. The unique habitats may come under increasing threats from anthropogenic pressures. This project aims to build local capacity to survey and plan the management of biodiversity. Involving resident stakeholders is an important priority and necessary to meet obligations under the Convention for Biodiversity.</p>	<p>This is a tough project, in a remote part of the world with extreme seasonal climate, and difficult to run remotely. Initial planning and progress were good but maintaining momentum has been difficult. The project may benefit from more 'hands-on management' with a full-time manager spending more time in the country and working closely with full-time, seconded counter-parts.</p>
<p>10/010 A National Strategy for Sustainable Wildlife Use, Commonwealth of Dominica</p> <p>Fauna & Flora International</p>	<p>Dominica is a relatively small island located in the eastern Caribbean. It has a higher percentage of native habitats than its neighbours but is also one of the poorer islands. The purpose of this project is to reduce the direct threats of over-exploitation facing the wildlife of Dominica, through the participatory development of a National Strategy for Sustainable Wildlife Use, and building of the in-country capacity for its long-term implementation, in partnership with the Government and communities of the Commonwealth of Dominica. The project aims to draw on and develop models of best practice for the region.</p>	<p>After some initial teething problems the project has made a successful start. Good working relations with the Forestry, Wildlife and Parks Division of the Government of Dominica (FWD) have been established and initiated delivery of all major outputs. Although there has been some slippage of the original schedule of activities, there is sufficient flexibility for these to be safely re-scheduled during the second year.</p>

Reference & Project	Project Summary	General Assessment
<p>10/012 Building legal and institutional capacity on biosafety in Chile</p> <p>Foundation for International Environmental Law & Development</p>	<p>The project is intended to support the development of a legal and institutional framework for the implementation of the Cartagena Protocol on Biosafety, that aims to manage the environmental risks associated with the use of genetically modified organisms. This is to be achieved by assisting the University of Chile <i>Centro de Derecho Ambiental</i> (CDA, Environmental Law Centre) to review the existing legal and institutional situation in Chile, and to present five case studies of legal and institutional frameworks on other countries.</p>	<p>This project has been well managed and highly successful in delivering its objectives. It is thought the seminar will prove highly influential in the development of Chile's biosafety capacity (although, at present, it is too soon to tell).</p>
<p>10/013 Conservation of Critically Endangered Gyps spp. Vultures in India</p> <p>Institute of Zoology</p>	<p>The Purpose and Objectives of this project are to identify the cause of dramatic decline of vulture populations, particularly in India, to determine the geographical distribution of the effect and to produce a Species Recovery Plan. Proposed and current activities include the establishment of appropriate Institution collaborative links, training of personnel in India in relevant techniques, building vulture aviaries and disseminating results and progress to as wide an audience as possible.</p>	<p>This project is progressing very well. The first year was, inevitably, going to be one of laying the necessary groundwork which is extensive given the training and building work that is an integral part of the project. This has been achieved in an efficient fashion and the next report seems likely to show just how effective this has been. The problems encountered have been dealt with sensibly with no great detriment to the project.</p>
<p>10/015 Project BioMap</p> <p>Natural History Museum</p>	<p>The project aims to increase the biodiversity knowledge base, establish research priorities, and promote efficient conservation and sustainable management of biological diversity in Columbia. It is a multinational partnership with extensive host-country participation. A database of bird species locations will help identify and prioritise important Bird Areas and help formulate a National Bird Conservation and Research Action Plan.</p>	<p>This is a well organized and managed project with clear aims and a good focus. It is going well with progress in all vital areas (e.g. training, establishing positive contacts with museum curators, provision of specialized computer programmes, data entry). Advice has been given on database protection and the role of collecting.</p>

Reference & Project	Project Summary	General Assessment
<p>10/016 Biodiversity basics strengthening sustainability of the Yasuni Amazonian Rainforest, Ecuador</p> <p>Natural History Museum</p>	<p>The project aims to facilitate conservation and the sustainable use of biodiversity in the Yasuni National Park, Ecuador. This is to be achieved through the production of biodiversity training tools and the capacitation of local people in biological techniques, ethnobiology and field guide production. Indigenous Huarani people from within the park will be trained in scientific concepts field biology techniques.</p>	<p>Although it is currently running behind schedule, this project is making progress towards its goals. It has successfully started its training programme and has begun to accumulate the information and resources necessary for the production of field guides. There have been some relatively minor setbacks but these are unlikely to run the risk of preventing it from achieving its main objectives. The exit strategy could be strengthened.</p>
<p>10/017 Preservation. Rehabilitation and utilisation of Vietnamese montane forests</p> <p>Royal Botanic Garden Edinburgh</p>	<p>The <i>project purpose</i> is to provide Vietnamese researchers and field staff with the knowledge and skills to enable them to undertake the sustainable management of the remaining montane forests through an integrated programme of training in theoretical and practical aspects of biodiversity assessment and utilisation.</p>	<p>Overall, the first year of the project has proceeded as planned, and all expected outcomes have been achieved. Vietnamese staff have been trained which should contribute towards achievement of the stated project purpose and outputs. Information collected should enable the production of valuable products to inform planners, researchers, and decision-makers on conifer and mycorrhizal conservation and the sustainable utilisation for livelihood benefits.</p>
<p>10/019 Action plans for the conservation of globally threatened birds in Africa</p> <p>Royal Society for the Protection of Birds</p>	<p>The project is now in its second year. Its purpose is to establish the capacity for participative species action planning to guide the recovery of globally threatened bird species in Africa. Activities include training of NGOs and government officials to prepare and deliver the action plan approach to conservation.</p>	<p>An excellent, imaginative project with a good focus. It is being professionally run and has every chance of fulfilling its objectives.</p>
<p>10/012 Madagascar Marine Biodiversity Training</p> <p>Foundation for International Environmental Law and Development</p>	<p>The Project was established to generate a long-term monitoring plan to aid the protection and conservation of the Anakao coastal region, the longest complete barrier reef in Madagascar. The work seems particularly timely as there are numerous threats to this important site. The Project proposes to coordinate the collection of marine biodiversity data and will train a range of local stakeholders in sustainable resource use and biodiversity monitoring and survey techniques.</p>	<p>An unfortunate series of delays have setback the schedule of work originally proposed for this Project. Despite this, the Project outlook is promising. The Project Leader has made a considerable effort to keep the Project on track despite delays and problems. The project team has established effective training programmes that teach different sections of the community about the threats to the coastal marine ecosystem and ways that these may be overcome.</p>

Reference & Project	Project Summary	General Assessment
<p>10/022 Bai Tu Long Bay Biodiversity Awareness Project</p> <p>Society for Environmental Exploration</p>	<p>Bai Tu Long Bay is an area of Vietnam that contains terrestrial and marine environments of considerable biological and geological significance. This Project was designed to aid the Vietnamese in establishing and managing this newly created protected area. The project also proposes to train staff in environmental management and to increase awareness of the local biodiversity and its intrinsic value.</p>	<p>Lessons have been learned during the troublesome first few months of this project and it is encouraging that the Project Manager has been able to make progress on some part of the work such as the baseline field surveys of Ba Mun island. Biodiversity surveying methods have begun and appear to be working well. One of problems that has still to be resolved is finding a building in which to house the interpretation centre.</p>
<p>10/027 Sustainable Use of the Sea Cucumber in Egypt</p> <p>Society for Environmental Exploration</p>	<p>This project is designed to determine what measures need to be taken to protect and manage Egypt's sea cucumber populations. Additionally, some pharmacological work is being undertaken to determine if the sea cucumbers can be used as a resource that has other, possibly medical, applications. The project plans to provide information that will allow Egypt to develop a sustainable fishery.</p>	<p>The project has clearly had a troubled start but this was out-with the control of the Project Leader. A good team of new collaborators is now in place and suitable staff have been appointed. The next annual report will be important in assessing how the revised work schedule is progressing.</p>
<p>10/029 Training of Vietnamese scientists in tree seed science and technology</p> <p>University of Reading</p>	<p>The Project is designed to train Vietnamese scientists in seed technology. It aimed to provide a two week workshop in Vietnam followed by in depth training for four of the participants in the UK. The trained scientists would then conduct research into seed storage behaviour and optimise environmental conditions for seed germination. In addition project funds were allocated to establish a seed laboratory at University of Agriculture and Forestry (UFA), HoChiMinh and develop undergraduate and postgraduate training modules on Seed Science and Technology.</p>	<p>The majority of the planned activities have been achieved in the first year although a clearer view of the project could have been achieved if its publication outputs had been available for inspection. Assuming the Vietnamese and UK scientists correctly complete the research they have undertaken no difficulties are foreseen with the project meeting its objectives.</p>

Reference & Project	Project Summary	General Assessment
<p>10/030 Developing local capacity for biodiversity surveys in Papua New Guinea</p> <p>University of Sussex</p>	<p>The project aims to develop capacity for biodiversity surveys in Papua New Guinea through the training of a team of local 'parataxonomists'. The training process includes a series of field surveys, which will themselves contribute to the understanding of Papua New Guinea's biodiversity. These will be lodged in local collections, providing resources for locally-based survey work. The parataxonomists will form a self-sustaining unit supported by income generated from biodiversity survey contracts.</p>	<p>This is a good project that has the potential to bring considerable benefits to the understanding and conservation of biodiversity in Papua New Guinea. The exit strategy is crucial to its long-term success, and could potentially be strengthened. In spite of a few early delays and setbacks it appears to be progressing well. Project reporting would benefit from a more detailed explanation of activities undertaken.</p>
<p>10/031 Biodiversity conservation in ancient church and monastery yards in Ethiopia</p> <p>University of Wales, Banga</p>	<p>The purpose of this project is to conserve the biodiversity of a number of forests preserved on ancient church and monastery lands of the Ethiopian Orthodox Church. The project aims to achieve this by strengthening the capacity of Ethiopian NGO and government institutions through training, expert advice, enhanced networking, financial support and joint project implementation. It intends to implement a project that conserves the biodiversity of sacred lands in-situ, and where necessary, ex-situ with subsequent reintroductions.</p>	<p>The project has suffered some delays and difficulties during the first year but has managed to overcome most of these with only minor slippage to scheduled activities. The quality of training is high and training objectives will be met. However, this is a very ambitious project which would benefit from a shift in emphasis from biodiversity assessment to resource management (with local communities and local clergy playing a central role) in order to achieve its stated purpose.</p>

Annex II

List of recently completed projects

Reference	Project Title
162/05/196	Genetic resource management training
162/06/046	Rattan diversity and sustainable management in Lao PDR
162/06/100	Plant biodiversity conservation and sustainable utilisation training in West Africa
162/06/111	Lobarion lichens as indicators of primeval forest in Carpathians
162/06/131	Wildlife and people: conflict and conservation in Masai Mara, Kenya
162/06/159	Conservation of Albizia tree species in Ghana
162/06/173	Protected areas management planning in the Andaman Islands
162/07/006	Ascension Island green turtles
162/07/127	Conserving the rare and endemic flora of Iran
162/07/137	European mink in Estonia
162/07/149	Tabunan forest biodiversity conservation project
162/07/163	Integrating national parks, education and community development (British Virgin Islands)
162/08/011	Biodiversity information in the former Soviet Union
162/08/024	Status and distribution of the Flora of the Falkland Islands
162/08/044	Conservation biology and genetics of the western lowland gorillas in Gabon
162/08/048	Conservation and cultivation of medicinal plants in Ghana
162/08/126	Fisheries management for biodiversity conservation in the Brazilian Amazon
162/08/144	River invertebrate biodiversity and water quality in the Dominican Republic
162/08/150	Empowering local people to manage the biodiversity of El Salvador
162/08/154	Biodiversity, conservation and sustainable use in a Mexican cloud forest
162/08/164	Developing biodiversity management capacity around the Ramsar site in the Turks & Caicos Islands
162/08/170	Bacterial diversity in coastal seawater in Shandong Province
162/08/176	Coral reef conservation / Wai Bulabula Project
162/08/196	Darwin project in coastal vegetation survey and conservation for Lebanon
162/08/214	Land snail diversity in Sri Lanka

Reference	Project Title
162/08/220	Management planning for conservation of fen mire biodiversity in Belarus
162/08/249	Nematode biodiversity and worldwide pollution monitoring
162/08/251	Data rescue & compilation (CD-ROM) for assessment of plankton biodiversity and bio-variability in the Indian and Atlantic Ocean
162/09/001	Renewing management of Sapo National Park and creation of the Liberian Protected Area System
162/10/012	Building legal capacity on biosafety in Chile
162/10/020	Phyllosoma larvae of the Cape Verde Islands
162/10/023	Enhancing biodiversity conservation through capacity building in Central America

Annex III

Summaries of recently completed projects

5/196	Genetic resource management training
Context	The External Programme at Wye have been running postgraduate programmes for continuing professional development since 1988. These courses, in Agricultural Development and Environmental Management, are delivered wholly by distance learning to a global audience. With the experience and contacts developed during implementation of this programme, they identified a need to develop a new set of distance learning materials in genetic resource management that would be specifically designed to meet the needs specified in the CBD. The link with Birmingham University with its international reputation in the field of plant genetic resource conservation, allied to Wye College's own expertise in both plant and animal genetics, provided a sound academic basis upon which they could achieve this.
Objectives	To produce effective and innovative <i>in-situ</i> training and education in biodiversity by providing a set of three courses in genetic management, 1) Conservation of Plant Genetic Resources, 2) Conservation of Animal Genetic Resources, 3) Conservation of Plant and Animal Genetic Resources; to provide access to training for a wide group of professionals through distance learning; and to provide a useful library resource for individuals and organisations.
Operation	Significant changes were made to the original plans (agreed by the Darwin Secretariat). The main objectives of the project according to these revised plans, delivering a set of new courses in plant and animal genetic resources and access to training for a wide group of clients, were achieved. The course handbooks are well organised and presented, with clear learning objectives and relevant exercises and questions. Details of the programme are provided on the dedicated Distance Learning Programme website www.wye.ic.ac.uk/EP
Impact	The original proposal was for an ambitious project that envisaged 300 students world wide receiving training over a 5-year period, with a majority of students from countries rich in biodiversity but poor in education resources. The programme so far, has attracted fewer students and only around half from developing countries. This is perhaps not surprising considering the difficulties of creating new courses and attracting students over a short time period. However, over 250 biodiversity courses have been delivered to almost 100 professional learners in over 30 countries worldwide.
Sustainability	The courses will continue and the contractor has taken the opportunity to further develop its teaching portfolio of related biodiversity courses and now has an impressive list of courses that it would not have without the Darwin Initiative funds.
Contact	Dr. J. Bryson and Dr. P. Smith, Wye College, University of London

6/046	Rattan diversity and sustainable management in Lao PDR
Context	Rattans are widely recognised as an important resource for both the national economy and the livelihoods of the rural poor in Lao. Large scale commercial exploitation of wild rattan plants is suspected to be leading to commercial exhaustion of stocks, or even biological extinction of some species. Scientific data on the management of rattans are scarce, there are few trained researchers in the country, and little comparative information is available from neighbouring countries. These constraints, amongst others, hampered both improved management of the wild stocks and efforts towards domestication.
Objectives	To train a Laotian to MSc standard in taxonomy and for him/her then to produce a national rattan identification manual; to determine the rattan species present in Nakai-Nam Theun Protected Area and to produce a manual for the identification of those rattan; to train Laotian staff in methods of participatory resource inventory and then to investigate the abundance and growth rates of one or more commercial species in the reserve and provide guidelines for their sustainable use; to establish working links between the Laotian Department of Forestry and organisations in the developed world able to offer technical support, particularly Oxford Forestry Institute and the Royal Botanic Gardens Kew.
Operation	The objective of producing an identification guide to the rattans of Nakai-Nam Theun Protected Areas was changed during the project. In its place, the researchers published field guides in Lao and English to the rattans of the whole of Lao and much of the surrounding territory. This greatly increased the scientific quality of the project. Lao scientists have received training in a variety of disciplines. However, one objective was not achieved, that of training a Lao botanist to M.Sc. level. This resulted primarily from a lack of fluency in English rather than from lack of scientific ability or a fault in the design or execution of the project.
Impact	The project has removed a number of constraints which prevented the Lao authorities from monitoring and conserving its rattans. The training component of the project has produced Lao scientists and technicians capable of sustainably managing rattans and of understanding why this is important. A very high number of books, papers, conference papers and internal reports was published as a result of this project. By publishing in Lao, the researchers have ensured that their results will reach a wide cross-section of the population. The project has introduced the Lao authorities to the method of working with international scientists. Some of these methods will take time to become established, e.g. the principle that herbarium specimens should be exchanged freely between research institutes (the Lao authorities allowed a set of specimens has been given to Kew).
Sustainability	It has been more than 60 years between the account of the rattans of Lao written in this project and the previous account. Other outputs are greatly in demand, particularly the Lao-language field guide and the ecology publications. The Lao counterparts have acquired expertise which they would not otherwise have and are now playing their role in the development of a National Biodiversity Strategy and Action Plan. Data and staff expertise derived from the project and the methods it used will be crucial to the current UNEP/UNDP-supported project to write a National Biodiversity Strategy and Action Plan.
Contact	Dr. N. Brown, University of Oxford

6/100	Plant biodiversity conservation and sustainable utilisation training, West Africa
Context	There is an urgent need to provide scientists throughout West and Central Africa with the skills required to study, conserve and utilise their native flora. The general need for such training has been highlighted in numerous reports, and the specific needs in west and central African countries have been stated in the ICPPGR Regional Synthesis Report (1995), in the IPGRI West African Biodiversity Training Report, and during surveys in West Africa taken by University of Birmingham and IPGRI staff. Following a meeting in Abidjan in October 1996 between representatives of the University of Birmingham, International Plant Genetic Resources Institute, and national biodiversity conservation representatives of several of the countries in West and Central Africa, a plant biodiversity conservation training programme specifically tailored to meet the biodiversity training needs of the region was formulated.
Objectives	To provide three week training courses for potential trainers on 'the conservation and utilisation of botanical diversity' in Benin, 'ex-situ conservation techniques' in Cote d'Ivoire and 'in-situ conservation techniques' in Cameroon.
Operation	Three plant biodiversity conservation and utilisation courses were taught in West and Central Africa. (Benin, Cote d'Ivoire and Cameroon). The three courses were jointly administered and coordinated by School of Biological Sciences, University of Birmingham and the Sub-Saharan Office of the International Plant Genetic Resources Institute (IPGRI), with the collaboration from the Ministries of Agriculture, Environment and Forestry of each country in the region. The courses included a considerable breadth of training that covers theoretical aspects and applied techniques, for both wild and crop species. Areas covered include taxonomy, eco-geography, field collecting and sampling theory, ethnobotany, reserve design and management, political and legal issues, <i>in vitro</i> conservation and the application of molecular techniques. They were tailored to meet local needs through intensive consultation in the region beforehand, selecting trainees who would benefit from and pass on the benefits of the training, and the involvement and support of formal and NGO biodiversity conservation agencies from the region.
Impact	The courses have fully met the original objectives, with the added achievements of training 10 more participants than expected, and also the production of plant conservation training materials specifically designed for the region. The training resulted in vital plant conservation skills in a region that has a highly demonstrable need for them. The careful selection of the trainees and the local bias of the course content serve to increase the impact of this project on conservation in west and central Africa. The nature of project also ensured a wide collaboration with regional conservation bodies.

Sustainability The training courses resulted in regional biodiversity workers having more detailed and appropriate skills and experience necessary for them to order, collect, catalogue, conserve and utilise their national and regional botanical diversity. They will be able to transfer the skills they have acquired to other biodiversity conservation and utilisation workers in the region. Thus the trainees will be better able to assist their countries and the regional as a whole meet the challenges and obligations set by the Convention on Biological Diversity. In addition, the training has provided a basis for future collaboration between the host countries and the University of Birmingham and IPGRI.

Contact Dr N Maxted, University of Birmingham

6/111 Lobarion lichens as indicators of primeval forests in Carpathians

Context Lobarion lichens are considered to be indicators of 'ecological continuity' and as such can be used to identify areas of old or ancient forest. As they are sensitive to air pollution as well as woodland clearance they have declined dramatically in recent years. In the 1960s-70s an idea to create a trilateral Eastern Carpathians reserve was developed and in 1990 a bilateral Polish-Slovak International Biosphere Reserve was established. However, the Ukrainian part was not incorporated although this region contains a number of protected areas of various designation. Ecological peculiarities and geographical distribution of Lobarion alliance were poorly studied in Eastern Europe. Thus, the project partners recognised a need to improve the lichenological knowledge of the region, and thus to support progress towards the establishment of a trilateral International Biosphere Reserve in the eastern Carpathians.

Objectives To locate, describe and map all location of the Lobarion communities in the Ukrainian territory of the proposed Eastern Carpathian trilateral reserve; to identify any threats to these communities and establish plots for long-term monitoring; to demonstrate the importance of protecting these communities within a single international trilateral reserve; to provide a full inventory of the lichens of these old forest locations, supported by voucher specimens to be permanently housed at the herbaria in Kiev and Edinburgh; to provide training and opportunities for discussion and collaboration for local nature conservation workers and lichenologists from Ukraine and the former Soviet Union.

Operation There were three main activities under the project: training of local staff, field expeditions and publication of findings. Training courses for local lichenologists and other staff were provided in each of the three years of the project during visits to the Ukraine by UK project staff. A Darwin International Workshop was also held in Kostrino in 1998 and the proceedings published. Ten field expeditions were undertaken to identify lichens in 'old forest' areas in the eastern Carpathians and to locate and describe sites for long-term monitoring. Experiments in lichen 'transplantation' were also carried out. Not all of the project objectives were achieved. Notably, a monograph on 'Lobarion lichens as indicators of primeval forests in the eastern Carpathians' was not produced.

Impact Despite the fact that not all the outputs and potential benefits of the project were realised, the work done has produced an excellent list of lichens in the study area, and the plots established should provide a sound basis for monitoring the lichen population in the area.

Sustainability This will depend on the commitment by the host country to continue this work.

Contact Dr B J Coppins, Royal Botanic Garden Edinburgh

6/131 Wildlife and people: conflict and conservation in Masai Mara, Kenya

Context

It has been clear for many years that human-wildlife conflict and unregulated tourism impacts have been constraining conservation progress in the Kenyan portion of the Serengeti-Mara ecosystem. Many observers have commented on this in the popular and conservation press, but no coherent research into the problem, or capacity building to identify and deal with it, has taken place. Kenya has a rich large mammal fauna and has many protected areas that attract substantial numbers of tourists, and that are surrounded by dense human populations. There is an urgent need for monitoring the resulting conflicts and research into management solutions which will protect wildlife whilst providing lasting benefits for local people. The project is based in and around the Masai Mara National Reserve (MMNR) where the problem is particularly pressing.

Objectives

To quantify the scale and impact of two contrasting forms of human-animal conflict and identify ways of resolving these conflicts to the benefit of wildlife, local Masai and tourists; to investigate the perceptions of local Masai towards these human-animal conflicts and integrate local attitudes and perspectives into long term solutions for conservation; to identify ecological factors affecting the recovery of endangered large mammal populations that are attractive to tourists; to train Masai rangers and Kenyan research students in relevant ground-based survey and research techniques and establish a methodology for ongoing monitoring of human-animal conflicts; to use the research results to build a model and prepare a management plan for large mammal conservation that will provide a lasting benefit for local Masai.

Operation

Three studies were undertaken: one on human-elephant conflict, one on tourism impacts, and a third on black rhino recovery and habitat change. All studies have employed innovative research techniques to provide useful new information on human-wildlife conflict and conservation of large mammals. However, the original aim of producing a sustainable management plan for the Mara reserve was not achievable due to the absence of a formal agreement from the reserve authorities and given the limited resources of the project. This output was subsequently limited to the development of management recommendations through a series of stakeholder workshops towards the end of the project.

Impact

The project has received substantial support from the WWF-East Africa Regional Office, the Kenya Wildlife Society and Moi University. Unfortunately, although the project consulted with the Narok and Trans Mara County Councils at the onset, a formal partnership agreement was not established, a situation that caused delays and difficulties in the first year of the project. This omission was subsequently rectified and the two Councils subsequently provided support and assistance on a daily basis to the research staff.

Sustainability

Conflict monitoring is being taken on by KWS as a formal methodology in the Mara and elsewhere. The graduate students that were enrolled in the PhD and MSc degree courses are returning to influential posts in conservation research and management in Kenya. Furthermore, the training of the guards in the use of GPS as a tool to monitor human-elephant conflict incidents should enable improved evaluation of methods used to protect crops and deter elephants in the area.

Trained local personnel and the further dissemination of research and workshop findings will have a very positive influence on future conservation in the region. In addition, the project has been successful in raising funds for two additional projects, one on community driven conservation and eco-tourism and the other on mitigation of human-elephant conflict, so maintaining a commitment to wildlife conservation in the region

Contact

Dr M Walpole, DICE, University of Kent

6/159 Conservation of seed and microsymbionts of *Albizia* tree species in Ghana

Context There is a need to develop agroforestry strategies to help to reduce the exploitation of the remaining natural wet/moist forest in Ghana. Nitrogen-fixing legumes play a key role in maintaining those forests, and they emphasise the importance of the soil microbial flora – in particular the microsymbionts – in maintaining natural systems. The Rural Forestry Division of the Department of Agriculture, (KNUST) had noted the disappearance of some of their nitrogen-fixing trees, *Albizia* species and a subsequent student project determined that the trees grew poorly outside their native range. Lack of appropriate symbionts was considered a possible cause. Work at the University of Dundee on Central American *Albizias* suggested that some species have unusually high specificity in their rhizobial requirements, and that many tropical tree rhizobia die or lose their capacity to fix nitrogen during storage. The research shows that there is an immediate need to preserve the germplasm of Ghana's indigenous *Albizia* species and their microsymbionts.

Objectives To conserve germplasm in Ghana of indigenous *Albizia* species, *A. adianthifolia*, *A. ferruginea* and *A. zygia* and their rhizobial and mycorrhizal microsymbionts; to train a technician at the University of Science and Technology (UST) in all techniques relevant to this conservation and to ensure that the recently established microbiology laboratory at the Institute of Renewable Natural Resources in UST is fully functional for microsymbiont conservation and research; to teach legume tree and microsymbiont biology and the principles of Darwin in an existing two year MSc Agroforestry and Forestry Course; to supervise MSc research projects, to test the hypothesis that the failure of *Albizia* species to establish outside their existing ecological zones is due to the absence of specific microsymbionts; to facilitate a link between UST and the established successful microsymbionts laboratory at Kenya Forestry Research Institute (KEFRI).

Operation A number of serious setbacks were encountered on this project including the unexpected cessation of World Bank funding which meant that available transport was very expensive. Also the laboratory which was to be used by the project was unfinished. This necessitated the purchase of a vehicle and alternative arrangements for beginning rhizobial isolation and testing. Delivery of the training outputs was seriously hampered by the unfinished laboratory at UST. As a result, the amount of training supplied failed to meet the original targets. In spite of this, it appears that the quality and content of the training was effective and well focused, encompassing a range of scientists, technicians and students from UD, UST and KEFRI. A major factor in the success of the revised training programme was the ability of KEFRI to undertake additional responsibilities and an increased workload.

Impact The required skills in propagation techniques and microsymbiont manipulation have been passed on to a wide range of local staff who will in turn be used to train others. The dissemination process through seminars and workshops has been well targeted and facilitated by the extensive links made with local organisations and user groups although there appears collaboration with government departments was limited. At the time of final reporting on this project, opportunities for further funding to extend the work of the project were being explored, and work was continuing to complete the data analysis and present the results of these studies to the international scientific community.

Sustainability Significant outputs in the form of valuable information on the silvicultural methods required to promote *Albizia* species in agroforestry systems have been obtained. The training and dissemination activities delivered by the project will have a sustained impact on the conservation and utilisation of *Albizia* species in Ghanaian farms.

Contact Dr JM Sutherland, University of Dundee

6/173	Protected areas management planning in the Andaman Islands
Context	The Andaman and Nicobar Islands stretch across 1000 kilometres of the Bay of Bengal between the southern tip of Burma and the north western tip of Sumatra. These islands are internationally recognised for their diverse rain forests, mangroves and coral reefs, which are of global biodiversity significance due to high levels of endemism. Immigration to this poorly developed Union Territory (administered by India) has caused the human population to rise by over 1000% in the last 30 years and to increase the level of environmental damage. Over 100 protected areas exist, yet none had either management plans or taxonomic surveys.
Objectives	To produce management plans for at least three protected areas which will be determined during the initial participative project planning visit; to commence implementation of the management plan recommendations, including the production of interpretative and educational materials; to produce biodiversity inventories for key taxa, species distribution maps and species conservation reports for globally threatened species occurring within the selected protected areas; to develop the lasting capacity for ANET to plan, implement and evaluate protected areas management plans, in conjunction with the Andaman & Nicobar Islands Forest Department; to strengthen ANET's existing capacity to plan and conduct biodiversity surveys, monitor key species population, and evaluate survey and monitoring data; to develop an environmental education strategy and to build the organisational capacity of ANET through training.
Operation	The preparation and implementation of three management plans were ambitious objectives that were not achieved (advisers comments on project reports highlighted that these objective were unlikely to be achieved given the proposed inputs to the project). However, the project has achieved a creditable and impressive list of outputs that have been widely distributed. They include: a CD-ROM with a valuable archive of information; a useful book "Sustainable Management of Protected Areas in the Andaman and Nicobar Islands"; the PA management report mentioned above; a detailed compilation of UK historical records of biodiversity on the Andaman and Nicobar Islands; an excellent Environmental Handbook for the Andaman and Nicobar Islands that is suitable for teaching purposes; and various technical reports and workshop proceedings.
Impact	Although the management plans were not produced the project did make a substantive and noteworthy contribution to the conservation of biodiversity on the Andaman and Nicobar Islands at a time of rising environmental pressure. This was achieved through biological surveys, training and organisational inputs, its partnership activities, and through the July 2001 workshop held in Port Blair that led to enactment into law of 45 recommendations by the Supreme Court, including closure of the Andaman Trunk Road which cuts through the Jarawa Tribal Reserve, the phased reduction of sand mining from beaches and the cessation of all commercial logging.
Sustainability	The principal partners are now in discussion about potential follow-on projects. The Forest and Wildlife Department are working with ANET to prepare the three management plans. Recommendations from the July 2001 Port Blair workshop have been incorporated into a Supreme Court Ruling.
Contact	Mr M Appleton, Fauna and Flora International

7/006	Assessing the status of Ascension Island green turtles
Context	One of the most important green turtle populations in the Atlantic come to nest each year on Ascension Island. The turtle population is understudied and, with increasing fiscal challenges on Ascension Island, the turtles have been highlighted as a possible source of revenue through ecotourism. The process of involving the turtles in an ecotourism industry requires research into the turtles' biology, an assessment of threats to their conservation and the development of a management plan.
Objectives	To assess the current status of Ascension Island green turtles; to identify threats to the population and to develop a management plan so that the turtles can be used to generate revenue for the local St Helenian population within an ecotourism industry without adversely affecting the turtles.
Operation	The Project from the outset had a clear understanding of the range of potential threats facing a migratory species with such specialised reproductive behaviour as the green turtle. A broad range of studies have been carried out, including: baseline population size estimates; studies of the annual migration route and navigation methods; foraging behaviour during the migration; potential conflicts with human fisheries along the migration route; feeding behaviour close to Ascension Island; reproductive biology (particularly the dependence of sex ratio on nest temperature); sexual dimorphism; nesting behaviour; effects of global warming on sex ratios; and methodological issues of estimating population sizes of migrating species.
Impact	The Project has made extensive use of voluntary help from a large number of individuals and organisations on Ascension Island, and has maintained a very high profile. They have also worked closely with the Ascension Island Administrator, and have been in constant communication with the Foreign and Commonwealth Office. As a result, green turtle conservation is a high priority both for the general population on the island, and for the island's administration. A new NGO, the Ascension Island Turtle Group (AITG) has been set up, and is successfully self-financing. They manage tourism activities based around the turtles, generating sufficient income from this to run a permanent conservation education centre and to carry on annual monitoring of the turtle population. The turtle Management Plan is being used to guide the formation of new conservation legislation on the island, including setting up Protected Areas, and the island administration has applied for RAMSAR status for several of the nesting beaches. The Project also won extra funding from the FCO that allowed them to carry out extra seasons monitoring.

Sustainability

Two major long term aims of many projects of this nature are to have the host nation apply the project findings to the management of biodiversity, and to set up long term monitoring of the population, beyond the life of the current project. Both aims have been achieved. The local administration is framing legislation for protected status of the main nesting beaches. They are also applying for RAMSAR status for some of the sites. Data from the Project are being used in discussions between the UK and the Bonn Convention on Migratory Species, to create a MoU for marine turtles in West Africa. The AITG is self-financing through funds raised from running tourist turtle tours, selling merchandise, and donations. They are recruiting and providing training to new members, vital because of the relatively high turnover of the population on the island. This group is carrying on the work of monitoring the turtle population during every nesting season. The University of Wales Turtle Group maintains its links with the island, and is actively seeking further funding to support future fieldwork.

Contact

Dr G Hays, University of Wales Swansea
Project Website <http://www.seaturtle.org/mtrg/projects/ascension>

7/006**Conserving the rare and endemic flora of Iran****Context**

The flora of Iran is recognised as being internationally important, supporting many endemic and rare species, as it is associated with the country's major topographical, geological and climatic variation. Increasing anthropogenic pressures, including deforestation, re-forestation, intensification of agriculture, drainage of wetlands and industrial development, are having a great impact on the landscape, and National Protected Areas are becoming increasingly important. However, maintenance of plant communities and populations of rare species is not guaranteed even within these areas without further human intervention and Iran has a lack of scientific expertise on which to base sound conservation and management decisions.

Objectives

To survey and monitor selected Iranian plant communities; to develop and set up a database and appropriate support programs; to develop a functional understanding of the causes of rarity and decline in the Iranian flora; to review and evaluate existing conservation measures, and make recommendations to the Iranian Government for the adequate future protection of the botanical resource of rare and endemic species; to develop a conservation programme at regional level; to establish close links between the UK and Iran to provide advice and to monitor progress.

Operation

The activities focussed on two sites in the north of Iran which were chosen for intensive study and two further contrasted sites (from central and southern Iran) which were chosen for "botanical survey" (the meaning of which was not clear). An ecological database was then produced, covering plants surveyed in the first two sites, and containing simple functional attributes of the plants and an ecological profile of each species. Finally, the database was analysed by the Darwin Fellow in Sheffield with the objective of making informed management decisions at the species, community and landscape level.

Impact

The work Dr Jalili (the "Darwin Fellow") appears to have raised the profile of conservation issues in Iran. The host institute RIFR and particularly its Director, Dr Jalili, has been lobbying the Iranian government for an increase in the amount of land designated as protected areas from 5 to 10%. He has already produced supporting documents for the Iranian Parliament and has started lobbying politicians.

The collaboration between the University of Sheffield and RIFR has been one of the main achievements of this project. In terms of outputs, the project has produced a considerable number of trained Iranian students (undergraduates and graduates) and a smaller number indirectly obtaining postgraduate qualifications. Ecological databases were established and a database on endangered and rare species enhanced. Workshops and a major conference were organised. A number of papers have been published and are planned.

Sustainability

A new working group (Plant Ecology Group) has been set up in the host institute (RIFR) to undertake Darwin project work. This group will stay together until after the end of the project with the intention of taking forward similar lines of research. The possibility of extending the line of research to other areas of Iran will be made easier by the support of the Director of RIFR, and because five students involved on the Darwin project are now employed in other research institutes and universities.

Contact

Dr J Hodgson, ECUS, University of Sheffield

7/137 Planning and establishment of European mink island sanctuaries in Estonia and Belarus

Context The European mink is one of the most threatened species of mammal in Europe, and it does not occur outside the continent. It is now extinct in most areas except a few eastern European countries and one population in northern Spain. A previous Darwin project (4/072) studied this decline in Russia, Estonia and Belarus and found the most likely cause to be aggressive interference from the newly introduced American mink. A new project was needed to use this knowledge to address the problem with a rescue operation.

Objectives To eradicate American mink from the sanctuary island; to finalise release strategy for captive bred European mink from the centre at Tallinn; to introduce the European mink to the island and to prepare a long term management programme.

Operation The project set itself a series of steps beginning with the selection of a suitable island and ending with the provision of management guidelines to safeguard the long-term viability of the newly established European mink population. This involved:

- (a) obtaining public understanding and approval for the release;
- (b) breeding of captive stock of European mink;
- (c) removal of American mink;
- (d) preparation of captive European mink for release, and the release itself;
- (e) radio-tracking and observation of released mink;
- (f) preparation of a management plan.

The project has been successful on all counts. By involving local authorities and hunters from the outset, it obtained abundant local approval and support. One of the project partners succeeded with the difficult task of building up a population of captive European mink that was suitable for release. All the American mink were trapped and removed from the island. 53 European mink were released in two pilot phases and one major programme. All were fitted with radio collars and tracked intensively over the ensuing days and months. A number have established stable home ranges and appear to be thriving. A comprehensive report of the project has been published that gives extensive background information covering relevant aspects of zoology, ecology and management, as well as a detailed coverage of the results of the release so far. Two further books are in the final stages of preparation, one of which provides a management plan.

Impact The project has laid a thorough grounding for the successful reintroduction of an endangered species into suitable island habitat from which the main cause of population decline (the introduced American mink) had been eliminated. The project now has a promising future with funds, expertise and enthusiasm available for further work. Tallinn Zoo is also able to continue to provide facilities for the breeding of European mink. The project has raised the awareness of local people to the needs for conservation of European mink in particular, and of wildlife in general.

Sustainability The project has successfully obtained support from the EU Life Programme 2001-2004, with collateral support from the People's Trust for Endangered Species (UK). This ensures that the programme can continue, to monitor the success of the released animals, and depending on those findings, extend the conservation programme to other islands. The ultimate sustainability and legacy depends on whether or not the released animals succeed in establishing a thriving population. The projects excellent dissemination of its methodology and results will provide a valuable case history for conservation programmes elsewhere.

Contact Dr D MacDonald, University of Oxford

7/149	Tabunan forest biodiversity conservation
Context	The island of Cebu, in the West Central Visayas Islands, has 14 endemic bird species and subspecies and some important refuge habitats. Tabunan forest is a unique type of natural limestone forest that is thought to be the sole remaining habitat for some of the world's most endangered birds, including the Cebu Black Shama, the Cebu Flowerpecker and the Cebu Hanging Parakeet. The forest is under constant threat of habitat destruction due to population pressure and socio-economic and political factors. Local people, local government, private landowners and NGO's have begun to recognise this threat but lack the capacity and expertise to set up a conservation programme.
Objectives	To carry out scientific research, trials and demonstrations to determine the best means for restoring and enlarging the Tabunan forest in collaboration with local expertise and to the benefit of surrounding communities; to support the establishment of a range of new livelihood opportunities and incentives linked to the sustainable use of the forest and its resources; to increase public awareness of the intrinsic value of the forest and its local, national and global significance as the last fragments of Cebu's natural heritage; to mobilise local stakeholders and future local project investors to plan for and support the long term protection, restoration and sustainable use of the forest and its species.
Operation	The original work programme and activities were based on a survey of the forest, promotion of local development opportunities, training, and publicity activities to promote conservation in Cebu. The completion of surveys early in the project identified an opportunity to increase impact by implementing activities at eight areas of forest in Cebu Island.
Impact	The project has had a significant impact in a number of areas during implementation and this is likely to be sustained after completion. The main areas are: the publication of a very comprehensive report that forms an important baseline study for the island; the establishment of the Cebu Biodiversity Conservation Foundation (CBCF) which has promoted local ownership of the conservation agenda; the training and capacity building events which enabled local stakeholders to contribute to the conservation agenda; and the fact that the results from the project have been disseminated widely in a variety of formats.
Sustainability	<p>The project has left an impressive legacy to the people of Cebu. The establishment of the local NGO (CBCF) has created an environment where conservation activities will continue to be implemented involving partnerships facilitated by the project. The scientific outputs produced by the project provide the baseline information required to plan future conservation activities and to monitor progress.</p> <p>The most important factor contributing to the legacy of the project has been the effort in promoting local ownership of project activities and using international expertise to empower local groups and individuals to contribute to conservation objectives. The project has recognised that more effort was required in considering aspects of local livelihoods. The combined approach of promoting local ownership and consideration of livelihoods would greatly assist replication elsewhere.</p>
Contact	M Appleton, Fauna and Flora International Project Website http://www.geocities.com/cbcf_inc/about

7/163	Integrating national parks, education and community development
Context	The British Virgin Islands National Parks Trust (BVINPT) is a statutory body managing 16 national Parks. It felt unable to meet obligations of the Convention on Biological Diversity because of a lack of basic biodiversity inventory data and funding for field activities and training. Lack of information was hampering its ability to prioritise species conservation or identify additional areas in need of protection. Consequently there was a need to build up capacity within BVINPT to identify, record and catalogue biodiversity and habitats with a view to making informed decisions on their management.
Objectives	To build up capacity within the BVINPT and other organisations within BVI to identify, record and catalogue the fauna, flora and habitats of the island, with a view to making informed decisions on their conservation; document the key components of the plant and animal diversity within a national park and a proposed protected area in the BVI; to further develop the protected areas management planning expertise within NPT; to enhance the role of the National Parks in the BVI as a national education resource; and to improve the socio-economic importance of National Parks in the BVI by building collaboration with local community groups and the tourism sector.
Operation	The method of achieving these aims was to run a series of workshops, led by expatriate experts, in critical techniques in a number of relevant areas including field identification and recording techniques, conservation and habitat management, and public awareness and appreciation. In total the project ran 16 workshops over the course of three years for a total of 53 participants from seven government departments. The workshops resulted in significant progress in achieving its original objectives. However, in two areas it was not possible to complete the objectives as thoroughly as anticipated: there was less input on the islands fauna than anticipated; and less emphasis put on public education and awareness activity than was achieved within the timeframe of the project.
Impact	<p>As a direct result of the project a significant number of personnel in several BVI government departments are now more familiar with the island's indigenous flora and fauna, and are aware of the management principles and techniques for the protection and conservation of biodiversity. Although it is unlikely that many participants will have the good opportunity to practice and develop these skills, a number of key staff, especially those working for the BVINPT, will be expected to continue the survey and inventory work. Providing they continue to receive training and support they are likely to make a significant contribution to recording and managing the BVI key conservation resources.</p> <p>The results of the biodiversity survey of two sites has already resulted in management action, including routing public access trails to prevent disturbance to vulnerable populations of plants. In several cases new information gathered during the inventory has affected the status of some previously poorly recorded species and so has had a direct impact on the management or recovery plans for these populations.</p>

Sustainability The Project is considered by partners as a pilot for future conservation and biodiversity initiatives in BVI and elsewhere in the region. The Project Officer has been assimilated into the core staff of the BVINPT which should ensure a long-term future for the biodiversity monitoring work. The relationship with Royal Botanic Garden Kew and its subsidising Millennium Seedbank Project, looks destined to continue with the Seedbank showing an active interest in “banking” the BVI seed flora and through an initiative to establish a taxonomic herbarium on BVI. Model inventory, management recovery and restoration work carried out during the Project will be transferred to other similar island situations e.g. Great Tobago, as resources are available.

Contact JC Smith Abbot, British Virgin Islands National Parks Trust

8/011 Biodiversity information in the former Soviet Union

Context The collapse of the Soviet Union resulted in disintegration of the old communist infrastructure which had co-ordinated biological programmes and information. Each new Former Soviet Union (FSU) country reorganized biological research, generally with reduced funding. The result was a crisis, particularly in areas under-researched but critical for conservation and the sustainable use of biodiversity such as the fungi and invertebrates. A new infrastructure is needed, and the means to handle information as that new infrastructure starts to operate.

Objectives To provide a directory of institutions and scientists working on biodiversity in the FSU; to donate computers to scientists; to facilitate a meeting of the institutions and scientists to discuss what infrastructure will be needed for future biodiversity work.

Operation The main technical aspects of the work were the transfer of data of people working in the biodiversity field in the FSU; the transfer of computers and the creation of the computerised *Biological Records Database*. The project achieved, and in some cases exceeded the outputs planned in the specification. Six training workshops were held; two scientific meetings were held; 140 computers were donated (though not all donated computers could be placed in nature reserves and some went to schools); 160,000 biological records were entered in to the database. As an additional “spin off” of the project, a large number of scientific papers were published, primarily descriptions of fungi and bacteria. The only place in which the project could be said not to have achieved its objectives is in the creation of web sites. This was attributed in the report to the difficulty of maintaining active sites in the FSU and in complications of electronic data transfer.

Impact The project involved extensive and high quality collaboration between the UK and FSU institutions. It has resulted in the improvement of infrastructure, data collection and networking in the biodiversity field in the FSU. The links with conservation and development projects in the country and region appear to be excellent in that direct support is being given (in the form of IT equipment and training) to nature reserves and other relevant organisations.

The project will allow host country institutions and governments to identify and monitor components of biological diversity and exchange of information. In addition, public awareness of biodiversity issues has been enhanced by media interest in the project, both in the FSU and worldwide (e.g. BBC World Service). The Directory of scientists involved with biodiversity clearly needs continuing efforts to update and maintain it. However, the establishment of this Directory will have a lasting effect on biodiversity work in the FSU and improve worldwide links with FSU scientists.

Sustainability The creation of the *Biological Records Database* is a major and lasting achievement which will provide invaluable data for biodiversity studies in the FSU and worldwide. At the time of reporting, all project staff were still in place and were using the resources donated through the project. The excellent team spirit which exists in the group of scientists working on the project suggests that they will continue to collaborate on this and future projects.

Contact Dr DW Minter, BioNET International
Project Website www.bionet-intl.org/html/whatsnew/updates/StPb2001.htm

8/024	Status and distribution of the flora of the Falkland Islands
Context	The Falkland Islands have a small native flora of about 170 species, of which 13 are endemic. Although a Flora was produced in 1968 by David Moore, an update on current distributions was identified as necessary in order that action plans for habitat protection could be produced.
Objectives	To develop mapping methodology from pilot exercise data; to produce user-friendly keys for identification of difficult plant groups; to identify a sampling strategy based on stratified sampling using distribution of broad habitat classes; to conduct two field seasons' plant recordings in the Islands; to modify the GIS package PC-Arcinfo to accommodate flora and other environmental data; to generate distribution maps of species and analyse ecological data to produce habitat descriptions for the Falkland Island Government; to publish and present results to attract interest in further field work to improve survey coverage and precision.
Operation	<p>The flora was surveyed and mapped using a modified GIS package. Aided by an existing Flora it was possible to produce an analysis of the change in species distribution in the last 30 years. Distribution maps were generated and ecological data were analysed to produce habitat descriptions for the Department of Environment in the Falkland Islands Government. The alien flora has always been significant and one of the outcomes of this project was the determination its current status in relation to the native flora. The project found that alien flora currently represents over 50% of the total vascular flora with a count of 175 species, almost double the number found in 1968. In addition keys to identify critical groups such as grasses, rushes and sedges have been produced.</p> <p>This is the first major plant conservation project to be awarded funding in the Falkland Islands. Most previous funded conservation projects on the Islands have been concerned with birds and mammals.</p>
Impact	This was a relatively small budget project that made use of local voluntary help throughout its duration. These local people have been trained to continue recording and monitoring changes in the flora. Other impacts following completion of the project include RAMSAR site designations and establishment of other sites for nature conservation. The project has stimulated wider interest in the local flora and the local Department of Agriculture has since commissioned a project to investigate the genetic and chemical content of plants for medicinal or other uses.

Sustainability	<p>A significant number of very worthwhile outputs were produced including over 30 publications with four major papers in peer-reviewed scientific journals and a further five in reputable, edited journals. A Red Data List for the Falkland Islands vascular flora of 23 threatened plants was produced. A functional herbarium was established during this period (funded by Falklands Conservation) using experience and material gained from the Darwin project.</p> <p>The project has formed the basis for future work towards a greater understanding of the local flora and vegetation. The establishment of a recording scheme and a National Herbarium for the deposition of voucher specimens are excellent legacies and essential for future plant conservation activities. The University of Belfast maintains its links with the Island through Falklands Conservation and planned future visits by the project holder will help to support local fieldwork. The field scientist gained a further year's employment by Falkland Conservation beyond the duration of the project to continue further work on the flora.</p>
Contact	Dr. J. McAdam, Queens University Belfast

8/044 Conservation biology & genetics of the western lowland gorilla in Gabon

Context Gabon is an important centre of tropical diversity with substantial tracts of closed canopy forest still remaining. These forests are some of the most diverse in Africa with a rich assortment of endemic plants and they form an important stronghold for populations of large mammals. With the decline in the oil industry, Gabon's forests and their associated fauna are increasingly under threat to logging pressure. Gabon has few resources with which to plan conservation measures and monitor their impact and there is a considerable lack of national expertise in the domains of applied ecology, wildlife management and conservation.

Objectives To establish a strong and durable research activity at, the Centre International de Recherches Médicales de Franceville (CIRMF) in tropical molecular ecology and non-invasive population genetic techniques; to establish a teaching programme in conservation science through which candidates for further training can be identified, and through which increased national awareness of conservation issues can be raised; to establish population genetic methodology whereby endangered rain forest species may be studied and long term conservation strategies can be developed.

Operation The research carried out by the project focused on molecular genetics of samples from gorillas within Gabon and from other Western Lowland Gorilla range states, but also expanded the sample set to include samples provided by the Wildlife Conservation Society from gorilla sites throughout Africa (the "pan-Africa sample"). Gabonese research technicians, trained both on-site and in extensive training periods in the UK at the University of Wales in Cardiff (UWC). The project developed and implemented undergraduate level courses in conservation biology. Teaching in the final year of the project was prevented by a national university strike but during this time the project took advantage of the industrial action to provide additional training to faculty members. The courses have now been integrated into the university curriculum.

Impact Despite logistical problems with sampling early in the project, the research component provided a significant amount of valuable research data, and results of the work will be utilised to inform a workshop in Gabon in 2003 to develop management plans for protected areas containing gorillas.

The genetic profile databases are not yet finalised, but are being compiled and will be enhanced by additional samples that were received near the end of the project. The training and education components have launched a sustainable programme to develop African expertise to continue these efforts and to inform conservation strategies into the future. The host institution in Gabon, the CIRMF, has greatly enhanced sustainability of the results by taking on the research technician as a full-time CIRMF staff member, and by creating a new senior scientific position to enhance the conservation biology research programme.

Sustainability

The transfer of technology and expertise to CIRMF will enhance the capacity of this host institution to serve and develop as an African centre of excellence in pan-African gorilla conservation. Both the research and education programmes started by the project will continue to operate in the host country. The research component will benefit from continued collaboration with international centres of excellence in conservation biology research, and in particular with the University of Wales Cardiff as both research institutions are carrying forward and expanding the scope of the research on gorilla molecular genetics and its relevance to conservation management of gorillas, to include wider geographic areas and the conservation of other endangered species.

Contact

Dr M Bruford, Cardiff University

8/048 Conservation and sustainable use of medicinal plants in Ghana

Context Medicinal plants play a vital role in the maintenance of human health throughout the world and they are also culturally and economically important. Ghana has a strong ongoing tradition of using medicinal plants for the treatment of a wide range of diseases and disorders. This provides a broad range of primary health care in rural areas and enables access to medical treatment for all. Despite the values of medicinal plants, their apparent efficacy and the lack of affordable alternatives, their continued availability is in jeopardy. Habitat destruction, over-collection and the loss of wild lands to agriculture has resulted in the increasing rarity of these resources. Traditional medicine is largely reliant on an oral rather than a written tradition and the loss of medicinal plants means not only the gradual loss of effective remedies but also rapid erosion of traditional knowledge.

Objectives To establish a comprehensive integrated medicinal plants information system and train staff to use this effectively; to promote the growing of medicinal plants in home gardens in Ghana, supported by the development of a demonstration garden at Aburi; compilation of a manual for growing medicinal plants in home gardens and a project report providing an overview on the state of medicinal plants in Ghana.

Operation Six members of partner institutions in Ghana were trained in information management using plant collections software developed by RBGE. An initial training workshop was held at the Centre for Remote Sensing and Geographic Information Service (CERSGIS) in Ghana run by UK staff, with subsequent follow-up and a technical training visits by a CERSGIS staff member to UNEP-WCMC. Staff of the Botanic Garden received training in horticultural techniques and the establishment and management of nursery facilities. Members of the project team undertook participatory rural appraisal interviews and developed spreadsheets for the management of diverse information for the ethnobotanical survey. Original objectives were closely followed, and all objectives met. Additional outputs included: computing equipment, software and training to the Aburi Botanic Garden; a medicinal plant garden at the University Botanic Garden; and a set project posters.

Impact The medicinal plant gardens at Aburi Botanic Gardens and the University Botanic Garden are well established and the Herbarium and Aburi Botanic Gardens now have the resources to enable them to continue managing data on medicinal plants. 2000 copies of the manual will be available free from Aburi Botanic Gardens for use by the target users (schools, communities and NGOs). The ethnobotanical report, along with all project outputs is available on the project website <http://www.unep-wcmc.org/species/plants/ghana>. The project has strengthened links between Aburi Botanic Gardens, the department of Botany and CERSGIS. Local communities participating have benefited directly from the availability of medicinal plant seedlings/plants provided by the medicinal plant garden at Aburi Botanic Gardens.

Sustainability The establishment of a plant database, training of personnel who will remain in post, and enthusiasm and good communication with the head of the Botanic gardens should ensure its' continued development. The project provided for a 5 year software support contract between the Royal Botanic Gardens Edinburgh (RBGE) and the Herbarium and Aburi Botanic gardens which enables continued technical support and communication between the UK and the host country. Links with the University should enable continued exploitation of the data and provision of educational resources. The involvement of groups from the local community in creating the manual for the propagation of medicinal plants will hopefully maintain interest in the project and secure its impact.

Contact Ms H Gillett, UNEP World Conservation Monitoring Centre

8/126 Fisheries management for biodiversity conservation in the Brazilian Amazon

Context

The floodplains of the Amazon river system are important in terms of biodiversity and economic activity. The ecological services that the floodplains perform far outweighs their relative area. The sustainable development of fisheries plays a key role in the conservation of floodplain biodiversity, firstly because the Amazon fish stocks are the most diverse found in any river system in the world, and secondly because the fisheries depend on the ecological services of the floodplain system and may provide a major economic incentive for the conservation of this key habitat. Amazon floodplain fisheries are currently under threat from two sources: direct fishing pressure and habitat modification. The introduction of modern fishing technology, combined with the growth of urban and export markets, have increased pressure on Amazon fish stocks to an unsustainable level. The floodplains have also been progressively modified for transport, flood control, agriculture and cattle ranching. There has been no systematic assessment of the economic benefits the fisheries provide, the way fisheries interact with other economic activities in the floodplains, or the effects of recent and proposed developments in the management of fisheries on these aspects.

Objectives

Analysis of the economic strategies of the different types of commercial fishers; analysis of the responses of commercial fishers to alternative management measures; analysis of the role of the fisheries sector within the Amazon regional economy. Development of a bio-socio-economic model to predict the responses of commercial fisheries to alternative management regimes; evaluation of management regimes. Training of a Brazilian researcher and three student research assistants in techniques for the economic analysis of artesanal fisheries and bioeconomic modelling.

Operation

During the course of the project, it became clear that project objectives were not taking into account the substantial role of subsistence fishers. The objectives were therefore expanded to include analyses of subsistence-oriented fishing. This increased breadth to the analyses has had considerable positive effects on the project outcomes and was clearly a good decision.

Considerable efforts were taken to ensure the data were representative for the different regions and the different fishing practices. The collection of the data and analyses of both the commercial and subsistence fishing strategies generated significant and interesting data in their own right. This data was used to generate a bio-economical model tailored to the Brazilian Amazonian floodplains. This model was then used to evaluate different management practices. The project has also provided training for the Darwin Fellow, O. Almeida, and a number of Brazilian students.

Impact

The results of the project are wider ranging than originally anticipated. One startling, yet vital, result revealed that the overall economic importance of the Amazonian fisheries sector is almost ten times more than predicted. The detailed economic analyses of different fishing practices have revealed a number of surprising results, which have consequences for management initiatives. Taken together with the bio-economic model, the economic analyses have provided compelling evidence that co-management initiatives are necessary to safeguard the future of the fishery. All originally agreed outputs were met and additional outputs were also achieved. Together these have allowed the project to have a much broader impact.

Sustainability

The near future looks very promising. The Imperial College / IPAM partnership looks set to continue. The Darwin Fellow, O. Almeida, has returned to the Amazon to take a role in a government conservation programme. Further funding has also been secured by IPAM to continue its conservation work. The training and information that has been provided in this current project can be used to help train others and to inform appropriate future management decisions within Brazil.

Contact

Dr K Lorenzen, Imperial College London

8/144 River invertebrate biodiversity and water quality in the Dominican Republic

Context The Dominican Republic occupies two thirds of the island of Hispaniola, the second largest island in the Caribbean. The island is relatively densely populated, leading to increasing pressures on scarce fresh water resources. A monitoring scheme is urgently required to inform management actions for these resources.

Monitoring the quality of fresh water resources is often a difficult undertaking, because of the technical and financial demands of carrying out numerous detailed chemical analyses. Researchers in the UK have developed simpler protocols, involving sampling invertebrate populations and statistically analysing the results. This approach has proved to be highly sensitive in providing information about levels of pollution. It is also straightforward to implement, and cheap. All of these characteristics make fresh water invertebrate community monitoring an ideal tool for monitoring both biodiversity and environmental impacts in developing nations.

Objectives To provide an inventory of freshwater benthic invertebrate species in DR so that the level of biodiversity and endemism can be determined; to produce a key to these invertebrates suitable for use by local water pollution biologists; to use an artificial intelligence model to classify and identify the major anthropogenic sources of impact in DR rivers and aid local environmental regulators in producing catchment management plans for preventing further deterioration; to train local workers in DR and other Caribbean countries in practical techniques for monitoring and protecting rivers.

Operation Baseline sampling was carried out and a key of benthic invertebrate families was compiled.

A reference collection was established in the national natural history museum and a video about the project was produced and disseminated throughout the country. Two Dominican nationals were employed as field assistants, and a training workshop for 'natural history museum and other relevant staff' was also held.

Impact A large amount of data have been collected by the Project. More information is needed on training and institutional support from the host nation to assess the value of this work.

Sustainability The host national employed by the Project as a field and lab assistant is now employed by the Museum of Natural History and it is hoped that she will be able to use and promote the skills she learned.

Contact Dr. M. Crane, Royal Holloway and Bedford New College
Project Website www.rhul.ac.uk/darwin

8/150 Empowering local people to manage the biodiversity of El Salvador

Context El Salvador has 16.3% forest cover of which over 65% is shade forest for coffee production. This shade forest therefore represents El Salvador's major forest resource, and an important reservoir for the country's biodiversity. However the composition of this forest is relatively poorly known and the country is poorly equipped to inventory and monitor its biodiversity, and thus to meet the main objectives of its Biodiversity Action Plan. In addition, efforts to develop markets for certified 'biodiversity friendly' coffee from El Salvador are potentially hampered by lack of taxonomic expertise and resources.

Objectives To train scientists as taxonomic specialists in particular groups of organisms and in the production of field guides; to train scientists to teach assessment and monitoring skills; to establish an annual training course for coffee farmers, NGOs, policy makers and new scientists; to provide user friendly biodiversity identification guides trees, insects and ferns; to produce a database of plants of the forest coffee assemblage via the WWW site; to facilitate institutional capacity building developing taxonomic reference collections and scientific expertise; to promote awareness of biodiversity issues in El Salvador locally, nationally and internationally.

Operation The research involves qualitative and quantitative sampling of specific groups of plants and animals within the shade coffee farms. Appropriate specimen sampling and preservation techniques were employed, and the material was rigorously identified by highly qualified specialists. Darwin scholars were trained in the UK through a process of closely supervised project work, and during the course of practical research in the field (in El Salvador). An annual training course on biodiversity monitoring techniques was held each year in San Salvador for a range of stakeholders. The aim of the course was to train participants in the basic skills needed to collect and evaluate biodiversity data, within the context of the CBD and El Salvador's own conservation needs, thereby providing some of the human resources needed to undertake El Salvador's national biodiversity inventory as outlined in the country's BAP.

Impact The achievements of the project have contributed towards the overall purpose by raising the awareness of the biodiversity value of shade coffee farms in El Salvador, producing and distributing high-quality identification manuals, increasing the knowledge of the country's biodiversity (and disseminating that knowledge), building the capacity of individuals and institutions to research and monitor biodiversity, strengthening networks of individuals and organisations operating in this field, and contributing towards national strategies for building and enhancing taxonomic capacity.

Sustainability

A number of the project Outputs are likely to endure. Notable among these are the identification guides thanks to their high quality, accessibility and wide distribution. The biodiversity data will also have enduring value, and the collections likewise so long as they are properly curated. The durability of some of the other outputs from the project, including training outputs, institutional capacity building, networks and increased awareness of the biodiversity value of shade coffee farms, will depend to some degree on the extent to which they are fostered from hereon. The project has contributed towards this by assisting with the formulation of policies for biodiversity inventory and monitoring in El Salvador, but a number of unpredictable factors are likely to play their part. Not least among these are the international price of coffee and the continued development (or otherwise) of demand for certifiable biodiversity-friendly coffee.

Contact

Dr. A. Munro, Natural History Museum
Project Website <http://www.nhm.ac.uk/botany/coffee/project>

8/154

Biodiversity conservation and sustainable use in Mexican cloud forest**Context**

The project focused on the area of El Rincón, Sierra Norte, Oaxaca, Mexico. The montane cloud forest, lies between 1600-2300 m near the municipalities of Tanetze de Zaragoza, Talea de Castro and Juquila Vijanos (Zapotec ethnic group). The forest is mostly owned by local communities who depend on the forest for a large number of products, the most important of which are firewood, medicine and crafts. Almost nothing is known of the impact of these uses on forest dynamics, structure and composition. Plans for the sustainable management of these resources by local communities are urgently required if the forest is to be effectively conserved; at present, none of the area is officially protected. At the outset of the project, the local communities were considering denoting an area of 6400 ha (El Gavilan), which is relatively remote and near-pristine, as a protected area, with potential for development for ecotourism. This is surrounded by secondary forest, providing an opportunity to develop a conservation plan based on definition of 'core' and 'buffer' zones, the latter permitting sustainable extraction of forest products by local people.

Objectives

To strengthen the capacity of CIIDIR to undertake research into conservation and use of biodiversity; to undertake a programme of inventory and research into the biodiversity of the El Gavilan area; to investigate the ecological impact of extraction of forest products by local people; and to develop a management plan for the conservation and sustainable management of montane cloud forest.

Operation

The majority of the research was undertaken by students and focused on the succession sequence from abandoned agricultural land to mesophilous cloud forest and associated changes in ecology, vegetation, soil and fauna. It also provided valuable insight into the ecology and population dynamics of *P. chiapensis* which is regarded as a threatened species in Mexico. The main thrust of the training involved the supervision of seven thesis projects. In addition, UK staff provided short-term training to Mexican project members in specific skills including GIS, molecular sequencing and participatory techniques. The investigation of the use of forest resources by local communities was studied in relatively little depth by a social sciences specialist, focusing mainly on secondary forest species.

Impact

The main achievements of the project have been the training and capacity-building at CIIDIR and the development of various aspects of ecological knowledge of forest succession in the study area. These will contribute towards the main purpose of the project by facilitating future research efforts and providing some of the background information necessary for effective conservation. The project's achievements in terms of catalysing the establishment of new research initiatives in the region have also made a significant contribution towards these ends. The project has apparently played a significant role in developing working relationships between the host partner CIIDIR and other governmental and non-governmental organisations in Mexico.

Sustainability The most enduring achievement of the project is likely to be the training and capacity building that was undertaken at CIIDIR. Most of the trained individuals there were core staff members, and as such are likely to continue to work at the institution for some time. The greater research experience/expertise and practical resources available to them as a result of the project, together with the increased national and international recognition of (and dialogue with) their institution, should set them in good stead for future research.

Contact Dr A Newton, University of Edinburgh

8/164 **Developing biodiversity management capacity around the Ramsar site in Turks and Caicos Islands**

Context The Turks and Caicos Islands (TCI) contain an important Ramsar site (wetland habitat of international importance). This site is presently in excellent condition, but there is strong pressure to develop the country's tourist industry and the project aimed to develop the expertise of the local people and government of TCI to ensure that a sustainable approach is taken to this development.

Objectives To collect baseline biodiversity data; to provide training for local people both in scientific background to enable them to monitor the biodiversity of the habitats) and in raising awareness through education and beyond of the importance of their natural resources; to develop a draft management plan with the local community; to build capacity in local NGO.

Operation The main activities of this project were biodiversity surveys (birds, bats, plants, herpetiles, insects, habitats), management planning, publicity and environmental awareness, training (biodiversity survey and monitoring, environmental awareness, management planning).

Two phases of species-level biodiversity survey work were planned under the project. These were conducted in a number of rounds, according to appropriate seasonal timing and the availability of the relevant taxonomic specialists and local accommodation. In conjunction with species-level survey work, the mapping of habitat types provided essential (and previously lacking) baseline information on distribution of habitats themselves – crucial for effective management planning. A draft management plan was developed (*Plan for Biodiversity Management and Sustainable Development around Turks & Caicos Ramsar Site*) that draws together species-level and habitat-level information, with ecological knowledge (and new observations) of the local flora and fauna, to produce meaningful information at a site scale. The plan also incorporated local knowledge, resulting from the close involvement of the local community throughout the project.

Impact The outputs of the project consisted of a management plan, baseline biodiversity data, biodiversity reference collections, conference proceedings, newsletters, dissemination networks. The main achievement of the project was the production of the draft management plan which details a programme for the sustainable development of ecotourism centred on the Ramsar site.

The project has raised awareness of environmental issues associated with development and has developed capacity of the local NGO (the Turks & Caicos National Trust) to influence development issues through contributions to the TCI government's national physical plan.

Sustainability	<p>The management plan is an excellent resource and the primary legacy of the project that is most likely to have an enduring effect, depending on the political will to implement it. The process of developing a management strategy with widespread reference to stakeholders could certainly be replicated elsewhere in TCI or in the region, but would require a financial commitment.</p> <p>The support of the Conservation Fund offers a method for securing this work into the future, and is an exciting development.</p>
Contact	Dr. O. Cheesman, CABI Bioscience

8/170	Bacterial diversity in coastal seawater in Shandong Province, China
Context	<p>The results of an EU-STD3 project between Belgium, China, Ecuador and the UK indicated a pronounced effect of industry and aquaculture on the composition of the coastal marine bacterial communities, especially in developing countries. However, the study focused on shrimp-pathogenic vibrios, and largely ignored other bacterial representatives of the coastal environment at the experimental station in Shandong Province, China. Particular concern was raised with respect to human health, and the biotechnological potential of such vulnerable populations. China is well aware of these concerns and after discussion between Prof Austin and the Ocean University of Qingdao (OUQ), the project was initiated.</p>
Objectives	<p>To establish a unit within the OUQ to specialise in the development of methods for the study of bacterial biodiversity in coastal seawater habitats; to initiate a programme of data collection on biological, physical and chemical parameters at polluted and clean coastal sites in Shandong Province; to train Chinese researchers during training courses in the UK and in Qingdao on the techniques and methodology relevant for bacterial isolation and identification; to assist OUQ in promoting its activities of increasing awareness of fragility of Shandong's coastal habitats and the need for sustainable management of them among local residents, industry and visitors; to assist OUQ in attracting further research and development funding; to extend and develop Heriot-Watt University's staff and research student expertise in marine microbiological problems in China.</p>
Operation	<p>The project research involved determination of the physio-chemical parameters of the water and sediment samples using established methods, and the use of spread plating techniques to isolate bacteria. Random collections of bacterial cultures were characterised by means of BIOLOG-GN (with numerical analysis) and cell protein profiling. Training was undertaken in the UK and in Qingdao by 2 Darwin Scholars, a post doctoral Fellow, four PhD students and three graduate students.</p>
Impact	<p>It is difficult to measure how this study has assisted the host country to meet the obligations of the Biodiversity Convention as, at the time of reporting, data was still being analysed. It is also difficult to assess the appropriateness and effectiveness of the training from the reports provided to the Darwin Initiative.</p> <p>The main impact to date seems to be informing the Chinese scientific community and government authorities about the ongoing research, establishing a Unit and knowledge transfer.</p>
Sustainability	<p>The training provided by the UK contingent has resulted in the promotion of one of the Darwin Scholars to the post of lecturer. The Chinese Ministry of Education have awarded funds to OUQ to expand and develop the research and education activities in marine science and a research contract was awarded to one of the participants by the Chinese Ministry of Science. In addition, the project also succeeded in obtaining funding from outside sources. UNESCO have also provided funding from training in marine biodiversity. Although all the funding received were modest, it is still very early days for the project, and these are encouraging signs that the project will become sustainable.</p>
Contact	Professor B. Austin, Heriot-Watt University

8/176	Coral Reef Conservation in Fiji
Context	Coral reefs throughout Fiji have come under increasing environmental pressure due to factors such as the use of fertilisers in sugarcane farms, over-harvesting of forests and human population pressure producing improperly produced solid and liquid waste materials. Industries are located along coastal areas and rivers dump polluted wastewater into rivers and sea without adequate treatment. Liquid wastes are a concern because they contain nutrients that, in sufficient concentrations, can hinder reproduction in certain fish species, coral growth and stimulate eutrophication thereby upsetting the coral reef ecosystem and its biodiversity. While recent initiatives by government departments, non-governmental organisations, communities and other stakeholders have focussed on directly conserving coral reefs there have been fewer attempts to manage wastewaters that enter the marine environment.
Objectives	To raise awareness among communities of the importance of coral reefs and the implications of water and waste management on the marine environment and encourage community initiated simple waste management innovations; to prepare a water management plan and strategy for the region identified; to identify and develop ecological water and waste management technologies for one hotel and one small community; to train local counterparts in the design, construction and maintenance of appropriate technologies; to collaborate with DETR in the production of specific strategies that could be incorporated under Fiji's National Biodiversity Strategy and Action Plan.
Operation	<p>The Project has achieved a great deal although it has failed to reach several of the original goals due to a number of unfortunate circumstances. The biggest and most unavoidable problem was the political coup that Fiji underwent during the first year of the Project which delayed the training of local community members on coral reef surveys. The second problem was lack of effective collaboration with two water consultancy firms which left a local contractor and the FSP teaching themselves how to create suitable wetland habitats. Despite these difficulties, most problems were overcome and one reasonably successful wetland has been created at the Shangri La hotel on Yanuca Island.</p> <p>Fewer wetlands have been created than originally proposed but local people have received excellent first hand training in wetland construction and maintenance. One virtue of having to "learn by mistakes" is that the end product is well tailored for the local area and those who have created the wetlands are knowledgeable of potential problems.</p>
Impact	Local community awareness of the need for better water and waste management has had beneficial effects. The Yadua community, for example, has replanted mangrove seedlings in deforested areas and these are now maturing. Three marine protected areas have been established and watershed management strategies have been implemented. Community training has led to altered waste practices with observable benefits. The wetlands created at the hotel resort have now resulted in a clear decrease in levels of nitrate and, to a lesser extent, phosphate. Creation of the wetlands required plant species that would naturally fix these nutrients. A wide range of native species have now been identified and cultivated. Local community members at Cuvu now have the necessary expertise to create further wetlands for ecological waste management.

Sustainability	Provided it is maintained, the wetlands water treatment system should persist and act as a strong incentive to create other similar waste treatment systems elsewhere. The expertise in how to construct and maintain such a system now exists thanks to this Project and as such Fiji is capable of replicating the construction of this type of waste management system.
Contact	Ms L Gormley, Just World Partners

8/196 Coastal Vegetation Survey and Conservation for Lebanon

Context Lebanon is an integral region of the Mediterranean Basin in terms of biological wealth and the whole country lies within the Levantine Uplands Centre of Plant Diversity (WWF and IUCN, 1994). A reported 12% of its flora is endemic. Lebanon's environment is under many anthropogenic pressures threatening its floristic richness and extensive biodiversity, including habitat loss and fragmentation, unsustainable use of resources, urban development and pollution. The coastal zone is considered to contain the most threatened habitats in the country as it has endured the greatest threats induced by human pressures. 67% of the population live along the coast in high densities and problems centre around further growth plus rapid industrialisation of the area. In addition, the tourism sector has focussed primarily on the coast, placing severe stress on these habitats. The current environmental condition of the Lebanese coast demands urgent and immediate biodiversity studies as well as an evaluation of the overall ecological status of coastal habitats.

Objectives To carry out a survey of coastal vegetation areas and an inventory of coastal species; identifying threatened plant species and habitats; to identify important coastal areas for plant conservation; to train in botanical inventory, plant identification and herbarium management; to train in recovery planning for three selected species and initiation of planting projects with coastal resorts; to establish plant biodiversity as a teaching and research component within Lebanese universities; to establish horticultural trials for Lebanese coastal species with commercial partners.

Operation Through the supervised fieldwork of the seven MSc students, staff were able to vastly exceed the original expectation. 26 sites were surveyed and related to geographical background data in a GIS. Data was also collected from 20 further sites along a coastal stretch of the Ibrahim River. The coastal inventory has been completed more comprehensively than first expected; based on 26 sample sites approximately 1,800 specimens were collected (with duplicates) and a checklist of some 1,530 species of vascular plants produced. While further surveys will be required before a definitive Red Data List can be produced, the project has achieved its aim of identifying specific locations that will be increasingly important for conservation of a wide range of endangered coastal plants. Research and teaching in plant biodiversity has been established at the AUB, through supervision of the MSc students and to a lesser extent at the Lebanese University. Unfortunately, of three species for which re-planting was planned, only *Pancratium maritimum* reached the stage of trial plantings.

Impact The immediate positive impacts of the project are reported in terms of Lebanese staff capabilities in areas such as herbarium management (AUB) and the increased pool of staff skilled in field survey, plant inventory and collection. Most of the MSc students trained through this project have been able to find work contributing to related national conservation efforts in Lebanon.

Sustainability One practical legacy of the project is the re-opening of the AUB herbarium building with adequately trained staff and commitment to its proper maintenance. Another is the creation at the university of the Masters programme of study in Ecosystem Management. The permanent monitoring sites and the digital database of information is a resource that can be used by subsequent projects and researchers. The project may be the catalyst through which the AUB recognises and fosters its expertise in the study of biodiversity, as witnessed by the proposal to create a new cross-disciplinary institute in this subject.

Contact Dr C Clubbe, Royal Botanic Gardens Kew
Project Website <http://staff.aub.edu.lb/~webeco/darwin.htm>

8/214	Land snail biodiversity in Sri Lanka
Context	<p>The land snail fauna of Sri Lanka is diverse and highly endemic contributing to the inclusion of the country in Norman Myers list of 18 global biodiversity Hot Spots. The native snails are threatened by the rapid reduction in forest habitats and the spread of non-native snails. The inability to distinguish between native and non-native species has allowed non-native gastropods to become established as serious pests at high cost to the national economy. Some endemic species have application in traditional medicines and may have commercial potential through the pharmacological activity of their mucus. Other species can transmit human diseases such as dysentery and meningitis.</p>
Objectives	<p>The project's basic purpose is to transfer skills (in molluscan systematics) to Sri Lanka and to enhance the resources of Peradeniya University. These purposes were to be achieved as follows: (a) initiating molluscan collecting surveys; (b) preparing a guide to the snail fauna that will be enhanced over the course of the project; (c) preparing a field guide; (d) preparing a guide to the 'synanthropic'/pest species; (e) training of personnel at the Natural History Museum (NHM) and Imperial College to identify material, conduct surveys and undertake research projects; and (f) running an exhibition on the project at the National Museum, Colombo and the Postgraduate Institute of Science, Peradeniya.</p>
Operation	<p>All the main objectives of this project have been achieved, in some cases reaching beyond the original targets. It has undertaken an extensive survey programme, published an illustrated species list as a field guide, as an interactive CD Rom in multiple languages, and as posters, provided training at the postgraduate level, and mounted two exhibitions. The project has also made a significant contribution to achieving recognition in the government of Sri Lanka of the need for an effective institutional base for systematics and taxonomy.</p>
Impact	<p>The establishment of reference collections with detailed distributions will provide a baseline for monitoring of biodiversity in Sri Lanka for the foreseeable future. The extent of newly discovered species establishes Sri Lanka as a globally significant centre of molluscan diversity. The ongoing studies of forest fragmentation and the survey of molluscan pests have important significance for biodiversity conservation. In addition, the training of Sri Lankan specialists should have a long-term impact on biodiversity and research.</p> <p>Most significantly, the work undertaken by the project in association with Sri Lankan specialists has greatly influenced the government of Sri Lanka in its decision to pursue the establishment of a national biodiversity institute.</p>

Sustainability	<p>The project has left a rich legacy for future conservation and study of Sri Lankan land snails. It includes the survey collections and data, descriptions of new species, books, field guides, papers and posters. It has also raised a number of important research questions on the evolution and ecology of the Sri Lankan snail fauna and in conservation biology in relation to climate change. The project has established institutional links between NHM and Sri Lankan governmental and non-governmental organisations, and it has helped to train Sri Lankan personnel in research methodology and survey methodology.</p>
Contact	<p>Dr. F. Naggs, Natural History Museum Project Website http://www.nhm.ac.uk/zoology</p>

8/220 Management planning for conservation of fen mire biodiversity in Belarus

Context The loss of mesotrophic fens, as a result of a range of human activities, is a threat to a number of species of particular conservation interest, especially in parts of Eastern Europe where the main remaining areas of this mire type are found. Species at particular risk include the aquatic warbler, found in the fens of Belarus. The republic of Belarus has highlighted mesotrophic mire as a priority habitat type for protection. However, outside expertise and resources were required to implement conservation actions.

Objectives To achieve an improved understanding of catchment-based fen mire hydrology and hydrochemistry; to prepare broad ecological profiles (zoological and botanical) for Dikioe, Sporova and Zvanet mires; to improve the information base about the ecology of a key biodiversity indicator species (aquatic warbler); to develop management plans for the three mires with local stakeholders on the basis of 1, 2 & 3; and to secure public and political support for the implementation phase and identify potential sources of funding.

Operation The project focused on research into two broad aspects of mire function: hydrology and biology. The study and evaluation of the mire water regime at the three mires (Sporovo, Dikoe and Zvanets) involved both fieldwork and desk study. Data from the field work plus an analysis of the data available from different scientific institutes (Belgiprovodkhoz, Belgidromet), allowed compilation of a full set of data on annual discharge in typical cross-sections, as well as average flow rate, water level, duration of flooding and other key hydrological indicators for the three mires.

Training was provided at various levels for more than 50 Belorussians (three students have attained MSc qualifications). Three reference collections and two databases (aquatic warbler and hydrological) were established. The three management plans have been sent to all relevant stakeholders within Belarus, i.e. the Ministry of Environment, its local branches, local drainage works companies, etc. The management plans have also been sent to the Ramsar Convention Bureau, Bonn Convention Bureau and the Lithuanian Ministry of Environment.

Impact This ambitious project appears to have achieved its objectives. However, the focus of the project was to a large extent on improving conditions for a single species (aquatic warbler). A balanced view needs to be taken to ensure that the biodiversity within the mire complexes of Belarus are considered and that management for one objective does not create problems elsewhere.

The project was very successful in producing, and gaining political support for, the set of management plans produced for the three study areas. The involvement of other institutions in data collection and analysis, and the transfer of both scientific and practical advice should mean that the results of the work will spread beyond the immediate aims established at its outset.

Sustainability Assuming that the legislation agreed comes to fruition, this will provide a solid basis for the adoption of the management plans. Having worked towards a consensus view of policies to be adopted and sold the plans to local organisations and people, there should be long-lasting effects, both in the conservation of the sites themselves and in the attitudes adopted to the management of natural resources in Belarus. Other environmental organisations are also working in the area and some form of co-operative effort may be valuable in ensuring that conflict and confusion do not arise from either mixed messages or desire to work to differing priorities.

Contact Royal Society for the Protections of Birds

8/249 Nematode biodiversity and worldwide pollution monitoring

Context Globally, an increasing number of researchers are using meiofauna to estimate the health of the environment. Outside of Europe and the US most of these analyses are to major taxa level i.e. phylum. Little meaningful information can be extracted from these surveys, they do not aid in environmental management and they do not further local or regional knowledge of biodiversity. There is now a requirement for a rapid increase in the number of biologists able to identify meiofauna and utilise this ecological information for monitoring of the local environment and empowering local management decisions, particularly with respect to pollution. The free-living marine nematodes are usually the dominant phylum in the meiofauna and they are the most diverse marine phylum.

Objectives To develop an easily accessible and updateable marine nematode internet key; to provide a UK based advanced training workshop in meiofaunal identification and specifically in marine nematode taxonomy for 15 biologists; to collaborate on specific regional and local marine environmental monitoring/biodiversity censusing projects in Poland and Brazil, providing further advanced training and thus developing local facilities and expertise; to provide a UK based advanced training workshop on statistical analysis of community data.

Operation Darwin Nematode project was concerned with knowledge transfer and with training and building up the scientific capacity of a large group of scientists from a diverse range of countries rather than a close partnership with one or two countries. The project was planned after consultation with biologists from Poland, Chile, Brazil and Pakistan who agreed that such an approach would be of use to them. There were 16 workshop participants from nine countries across five continents. Participants were either biologists who were already using, or intending to use marine meiofauna studies for pollution monitoring, or teaching staff at universities who could further spread their knowledge to other students. The marine nematode key of Platt and Warwick was digitised and made available as a JAVA-based application on the web site (www.pml.ac.uk/nematode) and on CD ROM. It is accompanied by a user help manual and information on nematode structure morphology.

Impact The training appears to have been successful: the calibre of the staff was extremely good and they have been trained to a high standard by project staff. In addition, successful visits to Brazil and Poland have resulted in cementation of a productive relationship between the project participants and the national researchers. The seminal key of Platt and Warwick is a major achievement. The Platt and Warwick series (3 volumes) is an essential reference for marine nematology, but volume 1 has been out of print for a decade and volumes 2 and 3 are expensive for individual researchers to purchase. The digital version of the key (based on volume 3) is easy to use, apparently authoritative and will be a lasting legacy of this project.

Sustainability According to the Final Report, the project has generated widespread interest and requests for further marine nematode identification training and expanding the Darwin nematode identification key. The PML staff appear to have been active in assisting workshop participants in accessing both local funds and also international agencies such as the EU and BC (and equivalents elsewhere).

Contact Dr MC Austen, Plymouth Marine Laboratory

8/251 Plankton biodiversity and biovariability in the Indian and Atlantic Oceans

Context Research into the basic properties of biodiversity patterns in different regions is essential to the development of programmes to reverse the current trend of biodiversity decline. The leading oceanographic Institutes of Ukraine, Panama and Kenya hold extensive and valuable information on species diversity and spatial-temporal variability of physical, chemical and biological characteristics of various oceans of the world. This information has been practically inaccessible to scientists outwith those countries. A scientific link is needed between Western Europe and developing countries to make this data available and establish an oceanographic database for the Indian and Atlantic Oceans. The data can then be evaluated, jointly analysed and disseminated to the international community.

Objectives To set up co-operation between the 5 institutes to rescue and compile oceanographic data sets and release them on CD ROM; to focus international attention on the biodiversity and biovariability of the tropical zones of the world's oceans; to provide assistance to the institutes which lack financial and/or expertise resources; to provide training in the UK for scientists from the institutes; to improve the information base at the genus and species levels to focus on providing archival data for further analysis where it may have wider impact; to develop new tools for presentation, analysis and dissemination.

Operation The CD-ROM has been produced and the data has been laid out in a straightforward and easy to use manner. The inclusion of the raw data alongside information on the techniques for obtaining the data on the CD-ROM greatly enhances the utility of the resource allowing independent researchers to properly assess appropriateness of the data to their particular research. The OceanBase database used by the project is specifically designed to handle the sort of information available to the project. It is a powerful package with many tools of relevance to marine biodiversity researchers. The choice of this package to present the project data appears to be an appropriate use of the available technology.

Impact The outputs of the project by and large match those stated in the original proposal. However, at the time of final reporting on this project the main aim of the project, the production of a CD-ROM incorporating the legacy data had been produced although it appears that it had yet to be disseminated.

Sustainability

The major beneficiaries of this work appear to be the scientists working in the institutes based in the Former Soviet Union. It is apparent that there is a continued commitment from these participants to maintain and enhance the database initiated in this project. As long as this continues to be the case and as long as the data is kept available to the scientific community then this will form an enduring and worthwhile legacy of this project. Further development of the web site to include access to the project data would greatly improve the potential for the dissemination of the project outputs. The project appears to have built upon work of an INTAS data dissemination project completed in 2000, and should be further enhanced by additional data provided by a new INTAS project to be completed in 2003. A NATO Collaborative Linkage Grant further supports the new INTAS project. These projects in turn contribute to a number of environmental data base projects in which the project members are involved.

Contact

Mr R Williams, Plymouth Marine Laboratory
Project Website <http://www.pml.ac.uk/diocean>

9/001**Renewing management of Sapo National Park and creation of the Liberian protected areas system****Context**

Liberia is a classic example of a country rich in biological wealth whose poverty drives its inhabitants to mine its resources rather than invest in their long-term management. It is emerging from a civil war that left its economy and infrastructure in ruins. The country contains an estimated 43% of the remaining Upper Guinean Rainforest, a forest belt of extraordinary biological value. Liberia was identified in a West Africa Conservation Priority-Setting Exercise in 1999 to have the best biodiversity conservation potential in humid West Africa. Despite the threat to the remaining forests from commercial logging, hunting and itinerant agriculture, Liberia is central to preservation of this ecosystem. To date, Liberia has only one fully protected area, Sapo National Park. However the elements of an effective protected area system and institution remain from before the war and can be strengthened but significant action is required now.

Objectives

To re-establish active, effective, planned management of Sapo National Park; to ensure local communities' support and respect for Sapo NP; to build Liberian capacity in conservation management planning; to build Liberian capacity in protected area management field skills; to establish Sapo NP as a training ground for the previous objective; to assist Government to evaluate and choose areas for expanding the protected area network through developing a rapid assessment tool for evaluating an area's conservation value.

Operation

This project ran between April 2000 and September 2002, starting soon after the end of the civil war. It has suffered from considerable institutional and political difficulties within the country and consequently outputs are significantly fewer than expected. FFI continued to work within the context of local institutions throughout the project period, reducing their expectations of the project, and aimed to more gradually develop infrastructures, and develop a continuation proposal to the GEF Programme of the World Bank. The quality of their reporting to Darwin is excellent.

Impact

Whilst impacts have been less than anticipated the project has partially achieved many of its objectives, most of which addressed CBD Article 8 'in situ conservation measures'. Whilst the project has had limited immediate impact on gazetting and management of reserved areas in Liberia, it has made an invaluable start to these activities in the Sapo Reserve, and has generated a number of continuation funding applications and parallel project activities. Considerable project exposure was gained through radio, television appearances and newspaper articles, and has significantly increased support for conservation activities and morale amongst conservation staff. The bio-monitoring project was less ambitious than originally intended, but has met its objectives.

Projects such as this are vital in assisting countries such as Liberia move towards their CBD Commitments.

Sustainability	The project has provided tools for expanding the Liberian conservation area network, and has stopped the decline in conservation skills of FDA staff. The Management Plan was finally produced in December 2002 after completion of the project. It is hoped that continuation activities and the proposed GEF protected areas project will enable this work to continue. Although the project has had limited success in some of its planned activities, it has served a vital role in re-establishing conservation activities in Liberia and in catalysing parallel funding opportunities (CEPF, CI, EC, GEF, World Bank, USAID).
Contact	J Suter, Fauna and Flora International

10/012	Building legal and institutional capacity on biosafety
Context	<p>Chile is a Party to the Convention to Biological Diversity (CBD) and is therefore bound by the need, under Article 8(g), to regulate and manage the 'risks associated with the use and release of living modified organisms resulting from biotechnology and which are likely to have adverse environmental impacts on the conservation and sustainable use of biodiversity'. In addition, Chile is a signatory of the 2000 Cartagena Protocol on Biosafety, adopted under the CBD. It is expected that this Protocol will enter into force in 2003.</p> <p>There is a lack of a comprehensive and coherent policy on biosafety in Chile, and despite the fact that there are several public institutions working on this area, no comprehensive legislative initiatives have followed. Therefore assistance is needed to work towards implementing the CBD.</p>
Objectives	The purpose of the project was to enable the University of Chile's <i>Centro de Derecho Ambiental</i> (CDA) to contribute to the country's implementation of the Convention on Biological Diversity (CBD), in particular Articles 8(g) and 19, and of the Cartagena Protocol on Biosafety. It aimed to achieve this by producing: an overview of the relevant international law and Chile's international commitments; a study of existing national legislation and institutions; and five case studies of comparative law that look at legal and institutional frameworks on biosafety in different countries of the region (Argentina and Brazil) as well as in other regions such as the Cuba, New Zealand and the EU.
Operation	The seminar on 'Biosafety: A legal framework for Chile' held on 19-21 March 2002 at the Faculty of Law of the University of Chile, was attended by 68 participants, which included government officials, academics, non-governmental organisations and research agencies. The focus of the seminar was to initiate the debate in Chile about the international context on biosafety and possible elements of a future national framework in Chile.
Impact	Research conducted under this project involved CDA and FIELD personnel and resulted in five research papers that were presented and discussed at the national seminar held in Santiago, Chile, in March 2002. In light of the debate and the conclusions of the project research, the CDA prepared a report with recommendations for the development of a legal regime on biosafety in Chile. Throughout the project, the project co-ordinator in Chile participated in six seminars, conferences and courses and her work on biosafety has featured in university publications, radio interviews, and in a report written by the main newspaper in Chile. The CDA is now a recognised legal institution in Chile in the area of biosafety. The project objectives have therefore been met, pending publication of the final outputs; an article in the forthcoming issue (December 2002) of <i>'Revista de Derecho Ambiental'</i> (Environmental Law Review) of University of Chile; and the publication of the proceedings of the First National Meeting on Environmental Law in Chile, which include a presentation related to this Darwin project.

Sustainability The project has stimulated awareness of biosafety issues among the key stakeholders in Chile, in turn leading to greater recognition and involvement of the partner organisation. The co-ordinator at CDA has been invited to join the National Committee on Biotechnology to provide advice on legal and environmental issues. Although the project did lever funds and support, the main leverage will be in terms of the increased capacity of CDA to work in this area in the future, and the way that the project has already led to a new joint proposal. Project Website <http://www.field.org.uk/fieldmain/biodiv.htm>

Context Ms C Lasen Diaz, Foundation for International Environmental Law and Development

10/020 **Phyllosoma larvae of the Cape Verde Islands**

Context It is important that high value resources such as the rock lobsters (Palinuridae) should be managed sustainably. However, the phyllosoma larvae of palinurids of the area are poorly known and not definitively linked to adults. Conservation of the stocks to ensure a sustainable fishery that provides export revenue for the Cape Verde Republic should result from policies based on knowledge of all stages of the life cycle and protection of biodiversity in their habitats. The project will improve the information base on the Palinuridae. Four species are known in the Cape Verde Islands, *Palinurus charlestoni*, *Panulirus echinatus*, *Panulirus regius* and *Scyllarides latus* and two others, *Scyllarus caparti* and *Scyllarus pygmaeus* are known from the African continental coast at the same latitudes. The project focuses on the larval stages, a neglected area of research.

Objectives To train a researcher from IDNP (Cape Verde) in the morphology and identification of phyllosoma larvae and to conduct joint research on the specimens in the Macaronesia 2000 samples. To conduct a review of the literature and the results of the research on the plankton samples and use these to prepare a key to identification of the phyllosomas of the archipelago and surrounding waters, providing a basis for research on dispersal during the larval phase and recruitment to the benthic population.

Operation This was a small, low budget project running for a period of nine months. The key and the training was successfully completed. The identification key clearly sets out how to identify the larvae and stages of larvae of four different species of phyllosoma. These species are all found in the waters around Cape Verde. The final published key has clear illustrations and keys that are relatively easy to follow to allow identification. Two researchers have been trained to identify the different larvae down to their species, and their work has contributed to the publication of the keys. The peer reviewed journal article has not been produced but the Project Leader indicates that it is in preparation.

Impact There has been a good working relationship between the different partners involved in this project. The two trained researchers should now be in a position to train others with the identification skills that they have acquired. In this way, the project has achieved one of the aims laid down by the Biodiversity Convention. In addition, the work has established a program to allow lobster larvae identification that will be important to their conservation and management. The published key will help these researchers, and others, to investigate the relationship between different life stages of the larvae.

The Instituto Nacional de Desenvolvimento das Pescas (INDP) appear to be following-up this initial work and there are plans to widen the identification to other local species.

Sustainability The key to identification has clear importance to the Cape Verde area and will be the main legacy. Furthermore, the two trained personnel are also now in a position to train others in identification procedures. The Project Leader also indicates that the original project could have been broader with its remit, in terms of an additional phase of research to follow the offspring from known species. This would seem to be an excellent next stage that perhaps could not have been foreseen before the identification keys had been produced.

Contact Mr A Lindley, Sir Alister Hardy Foundation for Ocean Science

10/023 **Enhanced biodiversity conservation through capacity building in Central America**

Context Central America is especially rich in biological diversity. Current estimates indicate that, overall, the region holds 8% of the world's plant species and 10% of its vertebrates, of which 14% are known to be endemic. The seven countries of the Central American Isthmus and five adjacent Mexican states form the Mesoamerican region, that constitutes a biological corridor connecting North and South America. The economies of these countries very much depend upon the use of primary resources, especially at a local level. The level of implementation of the CBD is therefore a key indicator of whether this diversity is being preserved and used in a sustainable manner, and that its benefits are equitably shared. In 1989, the Central American Commission for Environment and Development (CCAD) took over the role of co-ordinating CBD implementation performance of the countries. Nevertheless it has not yet been possible to elaborate a comprehensive regional picture of the degree of implementation. This project responds to a need recognised by the CCAD for external support to harmonise and report on the level of implementation of the CBD throughout the region.

Objectives 1) To provide and adapt a set of information management tools for conducting a thorough, harmonised review of CBD implementation across Central America. This will provide each country with an article by article assessment, identifying the principal strengths and weaknesses and, ultimately, the information needs for improving the level of implementation of the Convention throughout the entire region. 2) To develop a strategy for sharing expertise and fulfil the needs identified in the first objective. 3) To agree a harmonised procedure for future reporting on CBD implementation and on the extent to which national Biodiversity Strategies and Action Plans are addressing the full range of obligations.

Operation The National Focus Point's (NFP) of each country carried out an assessment of their country's implementation of the Convention on Biological Diversity. In each case a National Report was produced. In achieving this, many other important objectives were realised including the publication of a report on the implementation of the CBD in the region which will help to identify and develop strategies for further improving implementation of the CBD. The project had the clear advantage of adopting a tried and tested methodology first developed by UNEP-WCMC for an assessment carried out in the UK and later used in six European countries.

Some delays were encountered, notably those caused by Hurricane Iris which devastated Belize. Other delays were the result of the inclusion of Mexico in the project, a significant additional objective.

Impact It is clear that achievements of this project in such a short period of time (nine months) are largely due to good partnerships between the UK, host countries and other relevant organisations, especially with the Central American Commission for Environment and Development (CCAD). The level of training was very high and has enabled the seven countries to assess their country's implementation of the CBD and this has assisted them with the production of their Second National Reports. Such activities will place these countries in a very good position to meet their obligations under the CBD.

Sustainability

There is plenty of evidence of skills learned within the project being applied elsewhere. For example, in Panama the methodology learnt from the project is being used to assess the National Biodiversity Strategy and Action Plan in more detail.

Contact

Mr A Taylor, UNEP-World Conservation Monitoring Centre Project Website
http://www.unep-wcmc.org/cbd/assessment/central_america/indexeng.html
 Spanish version http://www.unep-wcmc.org/cbd/assessment/central_america/indexesp.htm

Annex IV

Recently completed projects – summaries of reviews

05/196: Genetic Resource Management Training

It appears that the project contractor has done a good job in difficult circumstances. The initial proposal was possibly over ambitious with regards to the number of students it intended to attract for a new course in a relatively short period of time. However, the contractor has taken the opportunity to further develop its teaching portfolio of related biodiversity courses and now has an impressive list of courses that it would not have without the Darwin Initiative funds.

06/046: Diversity and sustainable management of rattan in Lao PDR

This project has achieved more than was proposed, owing to the change in objectives agreed by the Darwin Initiative while it was running. By broadening the geographical area of the taxonomic element from a single protected forest to the whole country, a far more useful scientific result was obtained. The number of high-quality publications is very impressive and their impact will endure. Taxonomic papers and books will feed into the National Biodiversity Strategy and Action Plan while ecological ones will help in management of stocks and in encouraging new sources of income for rural people. The publications in Lao will be of particular use and a credit to the project.

The Lao counterparts have benefited from the training opportunities offered by the project. The project leaves Lao with a favourable impression of the Darwin Initiative and of working with UK personnel. This is reflected in the relative ease with which subsequent projects have been started.

06/050: Digital Automated Identification of Insects (DAISY): a way to circumvent the Taxonomic Impediment to monitoring biodiversity.

The development of the NNC software and the front-end software for DAISY looks set to endure. The DAISY software shows great potential to identify insects and other organisms and, if successfully marketed, is likely to fill part of the "taxonomic impediment". The UK project team have obviously benefited, with new collaborations and possible future programmes. It is likely that the datasets generated at UCR will endure, although the final report could have been clearer on project legacy. The establishment of collaboration with INBio opens up the opportunity to further develop the use of DAISY within another organisation in Costa Rica and hopefully UCR will be successful in obtaining funding to "replicate" the use of DAISY for different insect groups at UCR.

06/100: Plant Biodiversity Conservation and Sustainable Utilisation Training in West Africa

This has been a well-organised and targeted training project, which clearly fulfils the remit of the Darwin Initiative in facilitating countries to meet their obligations under the CBD. Key conservation workers have been trained in both theoretical and practical conservation methodology that will help them identify, conserve and sustainably utilise their regions plant biodiversity. The project was carried out by a contractor with considerable relevant expertise and experience, that will be reflected in the quality and breadth of the training given. The training has provided a basis for future collaboration between the host countries and the University of Birmingham and IPGRI, and will provide a lasting legacy in terms of trained conservation workers in a region where they are very much needed.

06/111: Lobarion lichens as indicators of primeval forest in Carpathians

In large measure this project was successful in boosting lichenology in the Ukraine and promoting the cause for the conservation of lichens and their habitat. The project failed to produce the proposed monograph but some findings of the project were published in the proceedings of the Kostrino workshop. The project has proposed to establish plots for long term monitoring, which may be achieved providing there is some form of continued funding and with assurance of local commitment.

06/131: Wildlife and people: conflict and conservation in Masai Mara, Kenya

The studies undertaken by DICE in the Mara were well conceived and executed and will have a positive influence on future conservation in the region. They are the outcome of sustained and dedicated effort by the project team and its associates in Kenya, and in the case of the project officer include a substantial period of unpaid project work in the final year. Without doubt, the project has provided good value for money. It is important that the hard work invested by the project team is converted into lasting impacts. As pointed out in the project's final report, a conservation programme of this nature with a timetable of three or four years should be sufficient for the identification of issues and possible solutions but not for the implementation of new management policy. Consequently there was always going to be a need for follow-up work of a more practical nature.

The project has been successful in raising funds for two additional projects, one on community driven conservation and ecotourism and the other on mitigation of human-elephant conflict, so maintaining a commitment to wildlife conservation in the region. At the same time, this continuing presence provides the Darwin Initiative with an opportunity to observe the longer-term impact of one of its more successful projects in community conservation.

06/159: Conservation of *Albizia* tree species in Ghana

Despite problems encountered during the project that were largely beyond their control, the principal objectives have been met. The project adapted well to the loss of World Bank funding, changes in personnel (and their availability), and the problem with seed recalcitrance. These problems and the changes that were made, are reported in a frank, unambiguous manner. Significant outputs in the form of valuable information on the silvicultural methods required to promote *Albizia* species in agroforestry systems have been obtained. The overall impression is that the training and dissemination activities delivered by the project will have a sustained impact on the conservation and utilisation of *Albizia* species in Ghanaian farms.

06/173: Protected Areas Management Planning in the Andaman Islands

This was an ambitious project which achieved most of its main objectives.

It made a substantive and noteworthy contribution to the conservation of biodiversity on the Andaman and Nicobar Islands at a time of rising environmental pressure. This was achieved through biological surveys, training and organisational inputs, its partnership activities, and through the July 2001 workshop held in Port Blair under the Darwin Project. The latter led to enactment into law of 45 recommendations by the Supreme Court, including closure of the Andaman Trunk Road which cuts through the Jarawa Tribal Reserve, the phased reduction of sand mining from beaches and the cessation of all commercial logging. The project is commended for its part in contributing to these outcomes.

07/006: Ascension Island Green Turtles

This Project has been a particularly successful undertaking of the Darwin Initiative. A great deal of high quality, focussed research has been carried out into the status and biology of the green turtle. This information has been used to frame a Management Plan that is informing new protective legislation and plans for developing the turtles as a tourist resource. Through their involvement of the local community throughout the work, the turtles now have a very high priority in the consciousness of the local population and administration. This is evidenced particularly by the formation of the Ascension Island Turtle Group, which is very active in managing tourist access to the turtles, and in carrying on long term monitoring of the population.

The mix of high quality scientific research, official adoption of Project recommendations, participation of the local community, and contribution to the economic development of the island, make this a model Darwin Initiative Project.

07/127: Conserving the Rare and Endemic Flora of Iran

This project appears to have been well-run, achieved its main aims, and most importantly built up close collaborations with Iran. This is clearly an important area of research and could have great relevance to conservation strategies throughout the world.

The collaboration built up between the UK contractor and RIFR was impressive and the importance of personal contacts and building up trust within host countries are lessons that cannot be over-emphasised.

07/137 European mink in Estonia

Overall this project has demonstrated a highly skilled and professional approach to a difficult and challenging conservation problem. The project team have succeeded in identifying the probable cause of the decline of European Mink and implemented a difficult conservation programme involving several steps, any one of which could have derailed the whole project, if not fully completed. Although the final outcome of their efforts to return an important species to the wild in Estonia will not be known for several years, the team are to be commended for their work and achievements so far.

07/149: Tabunan Forest Biodiversity Conservation Project

The project has been successful and appears to have been good value for money. The activities have delivered successfully against most scheduled outputs whilst also greatly increasing the number of reserves being worked with. The most important legacy of the project has been the empowerment and motivation of local individuals and organisations to contribute to the conservation of biodiversity. This along with the lessons learnt by the project should ensure continued long-term impact. The most important aspects of the project that could be publicised by the Darwin Initiative include: i) The establishment of the Cebu Biodiversity Conservation Foundation (CBCF) and through this, local facilitation of a broad-based partnership supporting the conservation of biodiversity in Cebu.; ii) The base-line surveys of Biodiversity, that located several endemic species previously thought extinct and others, previously not recorded in Cebu.

07/163: Integrating National Parks, Education and Community Development (British Virgin Islands)

The project is exemplary in its effective mobilisation and training of local staff in the inventory of biodiversity, and the baseline data acquired during the project is clearly of significant conservation value. The project was unable to proceed as far as originally intended in disseminating the results of the work in the area of public education but it is hoped that a further phase of work in BVI will tackle these important outstanding areas.

08/011: Biodiversity Information in the former Soviet Union

This appears to have been an excellent project. The projected outputs were in the main achieved and in a number of cases significantly exceeded. To have produced this level of outputs in the difficult working conditions of the FSU, is a remarkable achievement. It indicates a great deal of hard work and dedication on the part of the Project Leader and his collaborators.

08/024: Status and distribution of the Flora of the Falkland Islands

This project represents excellent value for money in terms of its outputs. These include over 30 publications including four major papers in peer-reviewed scientific journals and a further five in reputable, edited journals. The production of a Red Data List for the Falkland Islands vascular flora is particularly useful to the wider scientific community, as are the papers on habitat classification, non-natives and the annotated checklist and atlas. The production of keys to identify grasses, sedges and rushes was another very useful outcome as the non-petaloid monocots are usually the most needy and invariably the most neglected group of angiosperms in terms of identification guides. It is a pity that funds could not be found to publish this work.

Training of people from the local population, is not highlighted as a major benefit, but perhaps this is due to the small number of people involved.

08/044: Conservation biology and genetics of the western lowland gorillas in Gabon

This project appears to have been extremely successful at achieving what it set out to do, despite a number of logistical problems. It has reacted adaptively to these by adjusting and enhancing its methods and scope, and has produced results that are not only beneficial to the host country Gabon, but are also of scientific significance to inform conservation management of gorillas in Gabon, the wider Western Lowland gorilla range states, and throughout Africa.

Particularly worth noting is that while the project was initiated with a research focus on Gabon gorillas, when faced with a low sample size originating within the country, it took on an excellent opportunity to expand the scope of the research to include gorilla samples from the entire range of gorillas in Africa. This flexibility not only enhanced the training opportunities for Gabonese researchers, it allowed them to be at the forefront of scientific research of relevance to pan-African gorilla conservation.

08/048: Conservation and cultivation of medicinal plants in Ghana

This is an excellent project that offers a diversity of approaches to the conservation of medicinal plants. A database has been created and local staff trained to use the facilities. This resource has been used to create species distribution maps and produce a conservation report and is available for further exploitation. Two botanical gardens have been established to grow plants and provide a conservation and educational resource. Together with a manual for the propagation and cultivation of medicinal plants, and the involvement of local community groups in the production of this manual, there is an opportunity to encourage the sustainable use of medicinal plants by local people.

The outputs from the project are of a good quality and are likely to be widely disseminated. The technical assistance, equipment and training from the UK partner should enable the host country to build on the project activities and create a resource that is sustainable.

08/126: Fisheries Management for Biodiversity Conservation in the Brazilian Amazon

This has been a well organised, efficiently run and profitable project. The Darwin Initiative funding enabled the project leader to co-ordinate this large and ambitious project through to fruition. The project was successful as it provided realistic goals and milestones yet also saw the value in extending the survey work to give a clearer picture of fishing and exploitation of the Amazonian floodplain habitats. The implications of the project findings are considerable and the Brazilian authorities now have sufficient information to oversee appropriate management of these precious habitats.

08/144: River Invertebrate Biodiversity and Water Quality in the Dominican Republic

This Darwin project met with difficulties when the government of the host nation changed, necessitating renegotiation with a different institution and a different set of government officials.

Six out of seven of the project outputs were met but the plan to produce 16 River Catchment Management Plans were abandoned when it was felt it was unlikely that these would be implemented. The data collected by the project, in the first ever survey of Dominican aquatic invertebrates are likely to have been of high quality, and potentially of great use.

08/150: Empowering local people to manage the biodiversity of El Salvador

This is an excellent project that has made some valuable contributions to the understanding and knowledge of biodiversity in shade coffee plantations in El Salvador and has strengthened the country's capacity to research and monitor that biodiversity.

The botanical field guides produced by the project are excellent examples of the genre and should be highlighted by the Darwin Initiative as good practice.

08/154: Biodiversity, Conservation and Sustainable use in a Mexican cloud forest

This project has been very successful in making valuable contributions to our understanding of the ecology of forest succession in the cloud forests of Mexico, and in building both institutional and individual capacity for biodiversity research in the region. The project encountered some difficulties due to inconsistencies between the experience and expertise of the project partners (UK and Mexico) and some of the broader aims of the project, which has limited its success in making more applied contributions to conservation and sustainable management of the Mexican cloud forest. However, it has served as a catalyst for other projects that have the potential to contribute towards these objectives

08/164: Developing biodiversity management capacity around the Ramsar site in the Turks & Caicos Islands

The project has created an excellent resource in the shape of the management plan, the full importance of which will only be assessable in years to come.

Implementation of the proposals in the plan will require ongoing funding, but with the support of the Conservation Fund the signs appear positive. It was noted that the true cost of the project was significantly in excess of the Darwin grant because so much specialist time was donated free of charge,

08/170: Bacterial Diversity in Coastal Seawater in Shandong Province

This is a commendable project tackling an important question and providing valuable training to an area of the world that desperately requires it. There is little doubt that the microbial diversity of marine systems is vital to the quality of seawaters, and in order to main this resource it is essential that local scientist have appropriate skill sets to assess impact and biotechnological potential. In this respect the project scores very highly. The inclusion of greater detail in reporting in some areas (e.g.training of scholars) would have been useful.

08/176: Coral Reef Conservation /Wai Bulabula Project

Overall, this Project has produced a number of successful outcomes. The nature of the Project was perhaps ambitious and this may have contributed to some of the problems encountered in the running of it. For the most part, the hurdles were overcome and the end result is one that leaves a strong legacy for coral reef conservation. Many local communities are now much more aware of the need for careful waste management and the need for care and protection of the coral reef ecosystems.

08/196: Darwin Project in coastal vegetation survey and conservation for Lebanon

From the information contained in the final and interim reports, the overall impression is of a project that has been well executed and mindful of the principles underlying the Darwin Initiative. By securing additional resources both during and after the project funding period, the grant has delivered excellent value for money and in conjunction with other support, has catalysed a chain of training and institutional strengthening activities. Considering the period of years that a country normally requires to build up a self-sustaining capacity in plant taxonomy and herbarium management, the results from this three year project are a highly commendable beginning. This is especially the case when one sets these achievements against the generally uncertain situation in Lebanon in recent years.

08/214: Land snail diversity in Sri Lanka

Despite initial difficulties, the project has succeeded in recording and disseminating "the most detailed set of information on the distribution of a tropical land snail fauna that has ever been assembled", and in so doing has revealed a centre of land snail diversity and endemism of global significance. It has also been instrumental in training a cadre of Sri Lankan specialists in biodiversity, and in persuading the government of the need for a new institutional base for biodiversity. Clearly, the Darwin Initiative will be delighted with the outcome of its support for this project, and this reviewer recommends that it highlight the posters, book and CD ROMs as particularly noteworthy achievements and illustrative of good practice in the project as a whole.

08/220: Management Planning for Conservation of Fen Mire Biodiversity in Belarus

This ambitious project appears to have achieved its objectives. It has gathered data, especially on the aquatic warbler and has successfully produced management plans acceptable to the Ministry of Environment and other interested parties. Assuming that the agreed legislation comes to fruition, this will provide a solid basis for the adoption of management plans.

08/249: Nematode biodiversity and worldwide pollution monitoring

The project has been successful in achieving its main goals, and has certainly produced some well-trained students.

The training of younger environmental scientists in an obscure but vitally important faunal group is an incremental step towards a loftier goal of bringing nematode diversity assessment clearly into the portfolio of international assessment measures. The internet key is a pointer to the development of online taxonomy databases, an essential part of meeting the needs of less-well established researchers.

08/251: Data Rescue & compilation (CD-ROM) for assessment of plankton biodiversity & biovariability in the Indian and Atlantic Ocean

Although the project report lacked details in some areas, the project appears to have achieved its primary goal of rescuing, digitising and data basing various data sets languishing in several institutes around the world. The primary focus of the project was on the data from the institutes in the FSU. These data have been successfully digitised and incorporated into the OceanBase database and the project participants have written a number of scientific publications utilising the data.

The CD Rom appears to be a rich and valuable store of information and if distributed appropriately should make a valuable contribution to biodiversity research in the Atlantic and Indian oceans.

09/001: Renewing Management of Sapo National Park and Creation of the Liberian Protected Area System

This project has faced numerous difficulties working with local partners, in an institutional environment where there is little certainty, morale, stability, probity or emphasis on conservation. It has correctly strived to work within the context of these local institutions rather than impose its own organisational structures as some larger international NGOs would have done. This approach has brought frustrations but also successes in opposing logging roads, restoring morale and negotiating future support from donors. FFI demonstrate a clear understanding of the situation in Liberia and should be commended for the perseverance. Quality of their reporting is outstanding.

Training, ecological monitoring and park planning goals have largely been met. Community outreach and stakeholder participation in park management and planning have been less successful – partly because civil service attitudes take time to change. Short term continuation funding exists and a 5-year plan prepared for funding to the Global Environmental Facility. A comparatively small Darwin Grant, provided at a time when few donors were interested in Liberia has achieved much in very difficult circumstances.

10/012: Building Legal Capacity on Biosafety in Chile

This has been an excellent project with clear goals, well aligned to those of the Darwin Initiative, that have been achieved in a way that was timely, transparent, within budget, and will contribute to the pressing issue that is biosafety. The focus of the project on the seminar worked well, as it stimulated awareness of biosafety issues among the key stakeholders in Chile, in turn leading to greater recognition and involvement of the partner organisation.

10/020: Phyllosoma larvae of the Cape Verde Islands

The project has been successfully managed and has produced a valuable resource that can now form the basis for future work. The identification key is an important resource, as it will enable researchers to identify and quantify larval stages of the commercially important lobster species. This will enable lobster fisheries around the Cape Verde islands to manage and conserve their lobster populations.

10/023: Enhancing Biodiversity Conservation through Capacity Building in Central America

This has been a very important and highly successful project that has been carried out with a great deal of expertise. It cannot be an easy task to co-ordinate the activities of eight Latin American countries in a period of nine months to undertake this type of assessment. The fact that this was achieved, in a relatively short period of time is a credit to all those involved.

Annex V

Darwin Initiative outputs

Training Outputs		Total
(1a)	Number of people submitting thesis for PhD qualification	25
(2)	Number of people attaining Masters qualification (MSc, MPhil etc).	150
(3)	Number of people attaining other accredited qualifications	364
(4a)	Number of undergraduate students receiving training	1,501
(4b)	Number of training weeks provided to undergraduate students	2,564
(4c)	Number of postgraduate students receiving training	473
(4d)	Number of training weeks provided to postgraduate students	2,219
(5)	Number of people to receive at least one year of training	3,232
(6a)	Number of people receiving other forms of education/training	17,850
(6b)	Number of training weeks provided	11,918
(7)	Number of training materials produced for use by host country(s)	367
Research Outputs		Total
(8)	Number of weeks spent by UK project staff on project work in host country(s)	5,694
(9)	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in host country(s).	404
(10)	Number of formal documents produced to assist work related to species identification, classification and recording.	172
(11a,b)	Number of papers published or accepted for publication in peer reviewed journals	668
(11c,d)	Number of papers published or accepted for publication elsewhere	210
(12a)	Number of computer-based databases established (containing species/genetic information) and handed over to host country	308
(12b)	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	59
(13a)	Number of species reference collections established and handed over to host country(s)	245
(13b)	Number of species reference collections enhanced and handed over to host country(s)	77

Dissemination Outputs		Total
(14a)	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	1,177
(14b)	Number of conferences/seminars/workshops attended at which findings from Darwin project work have been presented/disseminated	600
(15a)	Number of national press releases or publicity articles in host country(s)	428
(15b)	Number of local press releases or publicity articles in host country(s)	338
(15c)	Number of national press releases or publicity articles in UK	240
(15d)	Number of local press releases or publicity articles in UK	208
(16a)	Number of newsletters produced	143
(16b)	Estimated circulation of each newsletter in the host country(s)	102,643
(16c)	Estimated circulation of each newsletter in the UK	50,855
(17a)	Number of dissemination networks established	138
(17b)	Number of dissemination networks enhanced/extended	83
(18a)	Number of national TV programme/features in host country(s)	122
(18b)	Number of national TV programme/features in UK	29
(18c)	Number of local TV programme/features in host country(s)	46
(18d)	Number of local TV programme/features in UK	11
(19a)	Number of national radio interviews/features in host country(s)	164
(19b)	Number of national radio interviews/features in UK	68
(19c)	Number of local radio interviews/features in host country(s)	132
Physical Outputs		Total
(19d)	Number of local radio interviews/features in UK	23
(20)	Estimated value (£'s) of physical assets handed over to host country(s)	814,270
(21)	Number of permanent facilities or organisations established	55
(22)	Number of permanent field plots established	920
Financial Outputs		Total
(23)	Value of resources (£'s) raised from other sources (i.e. in addition to Darwin) for project work	4,958,332

Annex VI

ECTF Recommendations

- The Reporting Guidelines should be modified to include a section requesting information on actions that have been taken in response to advisers' comments from the previous year. This would highlight where advisers' concerns have not been addressed and give Project Leaders the opportunity to flag any lack of, or late, feedback from ECTF.
- A number of projects are providing Annual and Final Reports with inadequate information on project methodology for reviewers to make an informed judgement of achievements. We would therefore recommend that Reporting requirements are revised to include a statement to the effect that if this information is not provided, the Contractor may be asked to re-submit the document.
- One of the Programme's strengths is that it has created an environment that has facilitated honest discussion of problems and potential solutions with the Secretariat and ECTF. In many cases, resulting changes have made a significant contribution to project quality. We therefore recommend that confidential reporting continues and is distinct from information requirements that will be made publicly available.
- Strategies to integrate Darwin projects into National Biodiversity Strategies and Environmental Action Plans should be considered as a theme for a Darwin Workshop.
- Much of the Darwin initiative funding goes to supporting projects led by UK scientific institutions and NGOs with considerable expertise in biodiversity issues. Often, constraints on biological conservation are the product of related issues such as poverty and policy. We therefore recommend that the Darwin Initiative actively encourages applications from organisations with relevant expertise in four key areas – economics, policy, poverty alleviation, and rights based issues – all fundamental to achieving biological conservation in poorer countries with high biodiversity.
- We recommend that Defra investigates the possibility of forming a Select Group of organisations that could provide specialist expertise (demonstrated by very successful Darwin projects) on a range of biodiversity related issues such as legal issues, local CBD compliance, and marketing strategies. The organisations could be drawn on by Darwin Contractors to provide advice or direct input to projects. Information on this group of organisations could be made available via the Darwin website.
- An assessment of the extent to which projects contribute to Darwin Initiative objectives suggests some form of quantification of success. As there are many criteria for judging project success, a simple ranking or scoring system for measuring achievements against key criteria such as impact, legacy etc, is often not appropriate and should be avoided if possible.
- We recommend that successful applications should clearly demonstrate how project Outputs will contribute to the Purpose of the project (as detailed in the Logical Framework). In addition, there should be closer scrutiny by reviewers of Annual and Final Reports for evidence of the contribution of Outputs to improved biodiversity conservation.
- Applications for Darwin Initiative funding, with carefully costed and realistic budgeting and targets, should be encouraged and rated highly at the application stage.
- The Darwin Initiative should invite a number of individuals that have been highly recommended by Project Leaders to present short accounts of their work at the Annual Darwin Lecture.
- Currently, although full reviews of Final Reports are provided to Project Leaders, only a summary of key comments are sent from Annual Reports. In most cases this has worked well, but in some situations more detailed comment is necessary. For this reason, it may be advisable to send full Annual Report reviews to Project Leaders in future.

- 12 Where a project proposal concerns the preparation and/or implementation of a Protected Area Management Plan, the Secretariat should seek expert advice to ensure that the project's design is both feasible and suitably robust.
- 13 The status of a large number of early projects remains unclear. We recommend that the Secretariat and ECTF endeavour to clarify this situation as soon as possible.
- 14 Confidentiality of reporting is crucial if the Initiative is to continue to receive honest assessments of project progress and achievements, and if reasons for difficulties are to be identified and addressed. We recommend that Reports are not made public and that Project Leaders are assured that this will not happen.
- 15 The Darwin Initiative main Objective should be clarified (there is no mention of the Biodiversity Convention in the version of the Logframe for Round 11) and a full Logical Framework for the Programme should be produced.
- 16 The Darwin logo is printed on many project Outputs such as manuscripts, technical manuals, and posters. The inclusion of the Darwin website address as an integral part of the logo would be a very simple method of promoting the Darwin Initiative and increase the number of people visiting the website.
- 17 We recommend that the Outputs coding system is abandoned or drastically simplified.
- 18 Darwin Initiative applicants are now required to demonstrate that their project seeks to address relevant Articles of the CBD, thematic programmes, and/or cross cutting themes. We recommend that the Darwin Initiative Secretariat, together with ECTF, assess how to make the best use of this information to illustrate the extent of project contribution to Darwin Initiative objectives.

List of abbreviations and acronyms

ACA	Annupurna Conservation Area	IPGRI	International Plant Genetic Resources Institute
AITG	Ascension Island Turtle Group	IUCN	International Union for Conservation of Nature and Natural Resources (The World Conservation Union).
ANET	Andaman and Nicobar Island Environmental Team	KEFRI	Kenya Forestry Research Institute
AUB	American University of Beirut	KKSPA	Khan Khenti Special Protected Area
BAP	Biodiversity Action Plan	KMNTC	King Mahendra Trust for Nature Conservation
BVINPT	British Virgin Islands National Parks Trust	KWS	Kenyan Wildlife Service
CBCF	Cebu Biodiversity Conservation Foundation	MLURI	Macaulay Land Use Research Institute (Macaulay Institute)
CBD	Convention on Biological Diversity	MMNR	Masai Mara National Reserve
CCAD	Central American Commission for Environment and Development	MSc	Master of Science
CDA	University of Chile Centro de Derecho Ambiental	NFP	National Focus Point's
CERGIS	Centre for Remote Sensing and Geographic Information Service	NGO	Non Governmental Organisation
CIIDR	Unidad Michoacán, Centro Interdisciplinario de Investigación para el Desarrollo Integral Regional	NHM	National History Museum
CIRMF	Centre International de Recherches Medicales de Franceville	NNR	National Nature Reserve
CITES	Convention on International Trade in Endangered Species	ONHM	Oman Natural History Museum
CONAF	Corporación Nacional Forestal	OUQ	Ocean University of Qingdao
DAISY	Digital Automated Identification of Insects	RAMSAR	Ramsar Convention on Wetlands
DICE	Durrell Institute of Conservation and Ecology	RBGE	Royal Botanic Gardens Edinburgh
DRC	Democratic Republic of Congo	RGB Kew	Royal Botanic Gardens, Kew
EC	European Community	RI	Raleigh International
ECTF	Edinburgh Centre for Tropical Forests	RIFR	Research Institute of Forest and Rangelands
FCO	Foreign and Commonwealth Office	SSL	Seed Science Laboratory
FIELD	Foundation for International Environmental Law and Development	TCI	Turks and Caicos Islands
FSS	Sustainable Societies Foundation	UAF	University of Agriculture and Forestry, HoChiMinh
FSU	Former Soviet Union	UCL	University College, London
FWD	Forestry, Wildlife and Parks Division of the Government of Dominica	UNEP	United Nations Environment Programme
GDP	Gross Domestic Product	UNDP	United Nations Development Programme
GEF	Global Environment Fund	UNESCO	United Nations Educational, Scientific and Cultural Organisation
IDNP	Instituto Nacional de Desenvolvimento das Pescas	USAID	United States Agency for International Development
IPAM	Institute of Environmental Research for Amazonia	UWF	University of Wales in Cardiff
		UST	University of Science and Technology
		WSSD	World Summit on Sustainable Development
		WWF	World Wide Fund
		YANI	Yayasan Adudu Nantu

