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

Please read the accompanying Guidance Note before completing this form. Give a full answer to each section; applications will be considered on the basis of information submitted on this form. Applicants are asked not to use the form supplied to cross refer to information in separate documents except where this is invited on the form. The space provided indicates the level of detail required but you may provide additional information on a separate sheet if necessary. Copies of this form are available on disk or by e-mail on request. You are asked also to complete the summary sheet attached at the end of this form. Although you may reproduce this sheet in a reasonable font, you should not expand it beyond an A4 sheet (leaving the allocated space for DETR comments to be made) as additional information will not be taken into account.

1. Name and address of organisation

THE NATURAL HISTORY MUSEUM

2. Principals in project

Details	Project leader	Other UK personnel (if working more than 50% on project)	Main project partner or co-ordinator in host country
Surname	Prŷs-Jones	Salaman	Renjifo
Forename(s)	Robert	Paul George William	Luis Miguel
Post held	Head of Bird Group	Research Associate	Conservation Biology Coordinator
Institution (if different to the above)	The Natural History Museum	The Natural History Museum	Alexander von Humboldt Research Institute (IAvH)
Department	Dept. of Zoology	Dept. of Zoology	Conservation Biology Programme
Telephone			
Fax			
Email			

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

3. Project title (not exceeding 10 words)

PROJECT BIOMAP

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

Colombia, one of the world's top megadiversity countries, faces great environmental challenges with effective conservation action hampered by the paucity of spatial data on biodiversity. PROJECT BIOMAP is an innovative approach for assimilating and repatriating biodiversity data to enhance the knowledge base and so provide an assessment tool for improved regional and national planning. BIOMAP will repatriate all known locality-data for Colombian birds, principally from museum specimens and fieldwork; publicly disseminate the user-friendly Darwin Database software; enhancement of regional and national institutional capacity through training in the utilisation of the database; identification of target areas to focus conservation and research action; and formulate priority-setting strategies to effectively and cost-efficiently pursue environmental protection and management.

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

May 2001(three years)

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

Aims

The Natural History Museum's mission is to maintain and develop its collections and use them to promote the discovery, understanding, responsible use and enjoyment of the natural world.

Activities

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

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

Achievements

- The significance of the Museum's contribution to biodiversity research was recognised by the award of a 3-year extension to the European Union Large-Scale Facility grant (value of extension 1,050,000 EURO). This increases access for researchers to biodiversity resources within NHM's systematics collections through short-term visits and provision of training.
- NHM staff undertook fieldwork in collaboration with local institutions in 66 countries around the globe last year.
- In total the Museum generated over £ 3.2 million in non-exchequer earnings for scientific research and curation during 99/00. Grants awarded to NHM staff include: (Locating long-term fern refugia – NERC; Capacity Building in Non-Coraline Marine Habitats, Ranong - EU DG1B Project; The Influence of Land-Use Management Practices on Species and Functional Biodiversity of Nitrate Oxidising Bacteria and Nitrification and Denitrification Processes - NERC; Patterns of termite diversity and ecosystem function - Leverhulme Trust; Trees of the Mayan area – AVINA; and Molecular diversity and evolution of microsporidia parasites – Wellcome Trust)
- Over 450 peer-reviewed scientific publications were produced in the last 12 months.
- A 100% pass rate was achieved by the students participating in the MSc in Advanced Methods in Taxonomy and Biodiversity (joint NHM and Imperial College course). NERC have committed to supporting future studentships for this course.
- Over 80 post-graduates students are currently being co-supervised by NHM staff and are working towards PhDs. NHM was awarded its own studentship quota by some of the Research Councils in recognition of the quality of training offered by NHM.

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

NHM has had a project funded every year since the beginning of the Darwin Initiative, with the number of NHM lead projects totalling 16.

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

Alexander von Humboldt Institute (IAvH); established to implement the Convention on Biological Diversity, is the key host country partner. IAvH provides key scientific and technical assistance and is principally responsible for overseeing in-country coordination of BIOMAP activities, e.g.: fieldwork surveys, workshops with leading scientists, the Ministry of the Environment, environmental NGOs, and ornithological associations; disseminating information; influencing national and regional planning; implementing conservation strategies; and potential future incorporation of other fauna and flora groups within the database.

Regional ornithological associations in Colombia will assist in: the collation of recent observation from individual observers; participate in workshops; and designing and implementing the National Strategy for Bird Conservation. Their ability to reach the general public and regional organizations will be utilized for environmental awareness and publicity campaigns.

Center for Applied Biodiversity Science-Conservation International (CABS-CI) and **CI-Colombia** are BIOMAP partners in the providing scientific and technical assistance, facilitating workshops, and matching funds to facilitate this innovative project.

Universidad Nacional, Instituto de Ciencias Naturales (ICN); the foremost academic Natural Sciences institution in Colombia will provide scientific and technical assistance and access to the largest in-country ornithological collection.

PROJECT DETAILS

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

PROJECT BIOMAP is a multinational partnership with extensive host-country participation aiming to increase the biodiversity knowledge base, establish research priorities, and promote efficient conservation and sustainable management of biological diversity in Colombia utilizing both international bird collections and field observations. Specifically, PROJECT BIOMAP will:

1. **Increase the biodiversity knowledge base** through data collation and repatriation to provide a biodiversity assessment tool.
2. **Identify and prioritise Important Bird Area's** (IBAs) to focus conservation activities to biodiversity hotspots.
3. **Formulate a National Bird Conservation and Research Action Plan**, to focus biodiversity protection and management.
4. **Strengthen Colombian institutional capacity** to assist commitments to the Convention on Biological Diversity (CBD).
5. **Provide training** to enhance the capacity of Colombians to develop and implement conservation action management plans.
6. **Increase public awareness** of regional conservation priorities using bird data.
7. **Establish a demonstration model** of international cooperation for biodiversity data repatriation and dissemination.

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

New project

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

How was the work identified?

Limited time and funds has forced conservation to be selective and cost-efficient. Priority-led action must be based on sound knowledge. However, the paucity of information on biodiversity distribution in many "megadiverse" nations hinders reliable assessments and therefore timely and targeted action. Fieldwork to collect data is necessary but time-consuming, yet a wealth of accessible information exists and is immediately accessible in the form of museum collections - an extensive and largely untapped biodiversity resource.

Colombia is one of the top megadiversity nations in the world, with 15% of all known terrestrial species and just 0.8% of the world's surface area that contains 18 Ecoregions and 65 ecosystem types. Colombia has the richest bird diversity in the world with 1,853 bird species, including 193 "Endemic Bird Area" species. It is widely recognized that Colombia faces great conservation challenges and large swaths of the country remain biologically little known. A strong biodiversity knowledge base provides an essential tool to establish effective conservation action and environmental monitoring. Birds are the best-known biological group in terms of taxonomy and distribution. Accurate locality mapping of all Colombian bird species in conjunction with modelling using Geographical Information Systems (GIS) and WorldMap (a computer programme developed by NHM to assess geographical distribution of biodiversity for conservation) will provide a powerful tool for conservation planning. Birds receive more public interest in Colombia than any other plant or animal group, making them ideal for raising public awareness and justifying conservation.

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

The National Biodiversity Policy & Proposed Action Plan for Colombia, has identified the following aspects framed within the context of the CBD that BIOMAP will specifically address:

- Examine bird species distributions towards identifying important endemic, sensitive and threatened areas.
- Improve the regional capacity of collections to generate biodiversity inventories.
- Combine field information together with satellite imagery and GIS to generate a biodiversity baseline.

Furthermore, IAvH, ICN, CI-Colombia, scientists and ornithological association members (widely recognised as an important source of observation data and promoters of conservation awareness throughout the country) formulated a framework National Strategy for Bird Conservation in 1999-2000. At the request and support of these groups, BIOMAP directly implements three of the four principal objectives within this framework.

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

Colombia ratified the CBD through Law 165 of 1994, and the Colombian Congress and Government have passed important legislative acts relating to its implementation. One of the obligations of the parties to the CBD is to adopt measures to promote a wide range of activities to safeguard biodiversity. PROJECT BIOMAP will assist Colombia meet the following CBD obligations:

Article 6: General measures for conservation and sustainable use (Goal); **Article 7**: Identification and monitoring (Purpose, Activities 3 & 4, Output 2); **Article 8**: *In situ* conservation (Goal, Activity 3); **Article 9**: *Ex situ* conservation (Output 1, 2); **Article 12**: Research and training (Goal, Output 5, Activity 4); **Article 13**: Public awareness (Output 6); **Article 17**: Exchange of information (Output 7); and **Article 18**: Technical and scientific cooperation (BioMap multi-national institutional partnership and scientific collaboration).

12 In what ways can this project be considered a Darwin project? How does the project relate to the Darwin principles? How would the project be advertised as a Darwin project and in what ways would the Darwin name and logo be used? **(21)**

PROJECT BIOMAP strongly relates to all the Darwin Initiative objectives and focuses on the five principal targets:

- *institutional capacity building* (strategic action plans at national and regional levels, decision-makers workshops);
- *training* (extensive series of workshops developed in Colombia, course conducted at NHM);
- *research* (compile database, four MSc thesis, GIS/WorldMap data analysis, conservation & management strategies);
- *work to implementation of the Biodiversity Convention* (BIOMAP addresses eight Articles);
- *environmental awareness* (birds are a powerful tool for conservation and will be used to generate public interest).

This project is a multi-national enterprise, led by NHM and utilizing considerable British expertise (156 weeks) from the following fields: Colombian ornithology, Neotropical conservation, biological databasing/analysis, and Colombian GIS techniques. PROJECT BIOMAP will promote the Darwin Initiative and use the logo by:

- Publishing results in international peer-reviewed journals; acknowledging the support of the Darwin Initiative.
- Darwin Report "Important Bird Area's and National Conservation and Research Action Plan for Colombia"; a bilingual publication supplied to all participants and policy-makers. A Darwin Database published on CD ROM.
- Logo on all reports, training course material, databases, and letterheads.
- Project website and biannual newsletters (both electronic form) will prominently feature the Darwin Initiative logo.
- Project launch in June 2001 with regional and national media coverage in Colombia and UK; a press release and TV coverage coordinated by partners that are all highly experienced in publicity and maximizing media attention.
- Publicity campaign on launching the Darwin Report to generate interest and awareness of the conservation strategy.
- General "non-scientific" articles will be published relating to the project's innovative approach and outputs, so encouraging other nations to adopt a policy of quantitative assessments for conservation through data repatriation.
- Promoting and advertising the project and workshops through the network of national & regional partners/supporters.
- All trainees will be known as Darwin Fellows including four MSc students.

13. Set out the proposed timetable for the work, including the programme's measurable outputs using the attached list of output measures. **(50)**

OBJECTIVES 1 & 5: Increase biodiversity knowledge base & provide Training

May 2001. Three day strategic planning workshop (**14A**); UK staff with Colombian partners (see 8) and interested institutions meeting in Bogotá to discuss implementation protocol, responsibilities (MoU design), and data collection methods.

June 2001. Select 4 Colombian MSc Darwin Fellows (**2**); purchase equipment; seek cooperation from museum curators to access collections and assess resources needing cataloguing; enhance WorldMap program capacity for point-locality analysis (**12B**).

July 2001. Project launch; press release (**15A** & **B**) and media coverage (**18A** & **C**; **19A** & **C**); produce a specimen computer-based "Darwin Database" (**12A**); enhance bird-recording programme in Spanish (**12B**); 4-week training course at NHM (**4C**); on database management, identification and preparing workshop training material (**7**) and technical manual in Spanish (**10**).

August 2001. A series four two-day (weekend) regional training workshops held in four cities jointly organised with regional ornithological associations (**4A**-75; **4B**-0.8 weeks; **4C**-10; **4D**-0.8 weeks; **6A**-75; **6B**-0.8 weeks) in managing bird recording programme for data processing.

September 2001-October 2003. Compile specimen-based locality data for Darwin Database (**12A**) from over 50 collections throughout Europe, North America and Colombia (**13A**); assimilate literature data; Colombian database manager assimilate individual database reports resulting from workshops (**12B**). Target of 500,000 locality-points for Colombian birds.

September 2001. Commence first MSc taught semester; presentation of project at the National Ornithological Meeting (**14B**).

Oct 2001/Apr 2002/Oct 2002/Apr 2003/Oct 2003. Five biannual newsletters with >500 circulation (**16A-C**) by list server network and posted on the website detailing project progress, future activities and other information.

January-December 2002. Principal specimen data-collection period by researchers working in 50 institutions worldwide (**13B**).

November 2002-May 2003. Rapid fieldwork surveys at key areas (75 person-weeks of field surveys by researchers).

January-April 2003. Commence final MSc taught semester and data analysis for four MSc dissertations (**2**).

October 2003. Completion of MSc dissertations after internal review among project partners. Four MSc graduations (**2**).

April 2003. Complete Darwin Database with 500,000+ registers; Public release (**12A**) via project website & CD ROM with bilingual technical users manual (**10**); press release (**15A** & **B**) and media coverage (**19A** & **C**).

OBJECTIVES 2-4: Formulate Important Bird Area's, National Bird Conservation and Research Action Plan & Strengthen Colombian institutional capacity.

May 2001. Foster a scientific and technical network to participate in BIOMAP conservation assessment process (**17A**).

May-September 2003. Darwin Database analysis with GIS environmental management techniques and WorldMap; assessing species complimentarily, human population density, threat, conservation viability, etc.

October 2003. Baseline conservation and management action plans produced; National and four regional draft reports (**9**).

November 2003. First National Strategic Planning Workshop; week-long technical conference (**14A**-75 people) organised to discuss BIOMAP results and design a National Bird Conservation and Research Action Plan and identify Important Bird Areas.

December 2003. A series of three four-day Regional strategic planning workshops (**14A**-90); drawing upon regional expertise.

February 2004. Final National Strategic Planning Workshop; week-long technical workshops to formulate the implementation of

a National Bird Conservation and Research Action Plan and finalise conservation and research priorities in Colombia.
March 2004. Edit and print Darwin Report (Spanish and English editions); develop a model and mechanisms for continuation support for the network of Colombian institutions to implement the Action Plan, beyond DI funding support.
April 2004. Darwin Report published "Important Bird Area's and National Conservation and Research Action Plan for Colombia"; feedback from participants and national/regional policy-makers; a national two-day conference organised to officially launch and disseminate Darwin Report (**9**); assist institutional network towards Action Plan implementations.

OBJECTIVES 6-7: Increase public awareness & Establish a model for biodiversity data repatriation.
June 2001. Establish BIOMAP website and internet list server dissemination network (**17A**).
October 2003. Preparation of five publications for international peer-reviewed journals (**11A**) and five "non-scientific" articles;
November 2003. Present seminars and poster at the VII Neotropical Ornithological Congress in Chile.
March 2004. Submission of five publications for international peer-reviewed journals (**11B**) and five "non-scientific" articles to popular wildlife and conservation magazines after internal review among project partners and revision.
April 2004. Public release of Darwin Report (**12A**) with press release (**15A** & **B**) and media coverage (**18A** & **B, 19A** & **C**).
April onwards 2004. Promote BIOMAP biodiversity data repatriation initiative at international/ national level conferences.

Total Training outputs: **2**-4; **4A**-75; **4B**-0.4; **4C**-2; **4D**-4; **6A** (125); **6B**-0.8; **7** (poster, information booklet).
Total Research outputs: **8** (35); **9**-4 (national/regional); **10**-2; **11A/B**-5; **12A**-1; **11B**-1; **12A**-1; **12B**-1; **13B**-50 (catalogued)
Dissemination outputs: 14A-8; **14B**-4; **15A/B**-2; **15C/D**-2; **16A**-5; **16B**-300; **16C**-200; **17A**-1; **18A**-2; **18B**-2; **19A**-2; **19C**-2.
Physical outputs: **20**= £1,200; **Financial outputs**: £ 170,118 (matching funds secured).

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

PROJECT BIOMAP is an innovative project to collate and repatriate biodiversity locality information and use that database for comprehensive analysis to formulate national and regional conservation action plans.

A prototype databasing project was conducted on the birds of Mexico in the late 1990s by the Universidad Nacional Autonoma de Mexico and the Comision Nacional para el Conocimiento y Uso de la Biodiversidad in conjunction with an array of overseas museums. The NHM played a proactive role in this, supported by limited, partial funding through the British Council Higher Education Links scheme. However, PROJECT BIOMAP goes well beyond this in aiming to provide a model for data repatriation with unprecedented international institutional cooperation (at least 40 museum-based collections will be involved) and public dissemination to maximise outputs and provide Colombia with an invaluable legacy; the Darwin Database. The project is also uniquely innovative in integrating and comparing comprehensive historical specimen data with recent observation data.

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

BIOMAP requires a high level of training for all staff, contributors, and Colombian policy-makers and conservationists. To enhance the level of knowledge and ability to use BIOMAP outputs, we undertake the following development/training activities:
1) **Hands-on training** provided to Colombian partners and interested parties by the UK experts; e.g. database management, GIS techniques, statistical analysis, and design and implementation of conservation priorities.
2) **Data management training course** for 4-weeks at NHM for project staff, including four Colombian researchers and two Colombian graduates on database management, specimen identification and handling, and database analysis.
3) **MSc course** (Environmental monitoring, modelling, and management) for four Colombian's at King's College, London.
4) **Training workshops in July 2001**; four 2-day workshops in database management and analysis in regional cities with host regional ornithological association (Bogotá, Cali, Medellín, Barranquilla) each for up to 40 people (50% undergraduates).
5) **National and Regional Strategic Planning Workshop**; 2 five-day national and 3 regional development workshops for 50-75 people to use the Darwin Database, design a conservation & research Action Plan and identify IBAs in Nov 2003-Feb 2004.
6) **National conference**; two-day presentation of the Action Plan, including database management training for 100 people.
7) **Develop an integrated Colombian conservation network** of individuals/institutions to participate within BIOMAP that will provide the principal groups to develop and implement Action Plans and maintain the Darwin Database.

Trainer assessments and test exercises on trainees will evaluate individual ability and training effectiveness. Workshop and conference attendees will be competent in operating and training others in the user-friendly Darwin Database with manual, so encouraging further data collection, compilation, and population monitoring together with conservation activities.

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

The principal four training workshops in July 2001 will be measured by the quantity of bird observations catalogued for the database and the number of people participating in this process. This provides an accurate and quantifiable trainee outcome. All trainees form a key element in the conservation network that will be crucial in: (a) continuing to collect information from field observations to up-date and build upon the Darwin Database and, (b) monitoring and implementing Action Plans, particularly the IBA programme.
Annual up-grading of the Darwin Database with information gathered from all regional groups by the Colombian database coordinator (set up by BIOMAP) will provide a future mechanism for monitoring contributions. The Colombian Coordinator at IAvH and ornithology groups will assume responsibility for monitor post-Action Plan conservation activities and ensuring that the National Strategy for Bird Conservation framework, particularly the Darwin Database are developed to their full capacity.

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

After the three year duration of PROJECT BIOMAP, the enhanced institutional capacity of the Colombian partners and supporters - many of them founders of the National Strategy for Bird Conservation- will take over responsibilities for the following activities:
1) The Darwin Database provides a monitoring base line for future generations, with unlimited potential conservation uses.
2) A bird recording system and database will be in place for observation reports for inclusion within the Darwin Database.
3) The Darwin Database website will continue to be hosted and maintained in Colombia by IAvH and ornithological associations.
4) The Darwin Report Action Plan will be an important reference for planning and implementation of conservation in Colombia.
5) Promote an IBA programme to continue the momentum of institution cooperation and further build capacity.
6) Promoting wider cooperation between Colombian and international institutions involved in biodiversity conservation.
7) Facilitate targeted field research and studies to areas with historical, anecdotal or no data and areas of high conservation value.
8) UK partners to promote the BIOMAP "blue-print" of biodiversity data repatriation initiative for other countries to adopt.

MONITORING AND EVALUATION

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

PROJECT BIOMAP has an eight-person Directive Committee (chairman: Dr. Prŷs-Jones) to oversee and monitor the project implementation, operation and post-project success. The four UK and four Colombian experts on the Committee are from highly respected institutions, including Colombia's National Bird Conservation Strategy Committee, an elected five person group with government and private sector participation. Six-monthly evaluations of project progress will be conducted by the Directive Committee based on biannual newsletters (October/April) and accounts by the BIOMAP Manager. The Manager is responsible directly to the Directive Committee chairman for project development and line management of staff and trainees. A detailed Memorandum of Understanding (MoU) between all institutions involved will detail specific responsibilities and elaborate a strict timetable of completion dates to ensure progress and deadlines are achieved.

Quality assurances to validate data collected are provided through, e.g. statistical vetting for distribution outliers, differentiation between specimen, literature, and observation points for visual comparison, random performance checks, etc.

Using specimens and recent observations together will potentially produce a historical dimension to the distributional data that could be invaluable for extrapolating possible future population declines/expansions and for identifying areas for future study

PROJECT BIOMAP achieves excellent value for money, based on the following points:
- Assimilating 150 years of museum-based data is highly cost-efficient compared to employing solely field survey techniques.
- Providing training, software, and minor remuneration for extensive field ornithologist's field data is exception value.
- The scientific and conservation value of the Darwin Database will be immeasurable, being a major legacy for Colombia that will grow in value with time.
- Anticipated large efficiently savings for conservation, in time and funds, with focused and quantitative priorities available.

PROJECT BIOMAP completes all dissemination outputs (see question 13), and concentrates particular energy in dissemination of project data and results, particularly using cost-efficient electronic formats (E-mail is widely used in Colombia), e.g. reports, newsletters, and publications posted on the BIOMAP website and disseminated widely through project list-server network. BIOMAP partners and supporters will be important avenues for result dissemination and promotion. The Darwin Database will be circulated on the web and freely available on CD ROM.

As a pioneering global model for data repatriation and public dissemination, BIOMAP will be promoted through a series of scientific and main-stream publications, international press releases, and at international conservation conferences.

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

Project summary	Measurable indicators	Means of verification	Important assumptions
Goal To assist an effective environmental protection and a sustainable natural resource management strategy for the conservation of biological diversity and poverty elevation in Colombia.	1) Increase proposed protected area network to 50% of target areas by 2004. 2) Increased sustainable natural resource management plans in target areas. 3) Reduce biodiversity losses; 90% of bird species within a protected area by 2004.	1) Governmental and NGO protected area registry. 2) Monitor annual regional natural resource corporation's development reports. 3) Monitor threatened and indicator species status by ornithological associations.	1) Relative economic stability for protected area expansion. 2) No major erosion of environmental policy 3) Government control of protected areas against encroachment.
Purpose To increase biodiversity knowledge and data repatriation to formulate priority-setting strategies to effectively and cost-efficiently focus research and conservation action for birds in the first instance.	1) Monitor bird population and targeted fieldwork by 2004. 2) Focus conservation attention to all of target areas by 2004. 3) Provide new user-friendly management tools (database/GIS) by 2004.	1) IAVH information of all research institution activities. 2) Monitor reports and action plans by institutions & NGOs. 3) Outputs; reports, citations, Darwin Database CD, & info requests.	1) Cost effective measures incorporated into strategy. 2) Governmental and institutional willingness to participate. 3) Participants trained to use & interpret database results.
Outputs 1) Improve scientific knowledge base of bird distribution by public data dissemination. 2) Identify and prioritise Important Bird Area's (IBA). 3) Formulate an integrated bird conservation action plan, based on synthesis of activities. 4) Strengthen Colombian institutional capacity to assess and enact conservation action. 5) Provide training in GIS and environmental assessment and management techniques. 6) Increased public awareness of conservation priorities 7) Establish a model example of international cooperation for biodiversity data repatriation. .	1) Darwin Database released to public domain, via web and CD by January 2004. 2) IBA report with Output 1 published in April 2004. 3) National Action Plan for Conservation and Research published in April 2004 with Output 2. 4) Ten technical workshops, 150 people trained from five institutions by March 2004. 5) Four MSc graduates from King's College, London by December 2003. 6) Publicity campaign, internet, and poster campaign in 2004 7) Successful execution of the project activities by 2004	Directive committee: 1) Circulation of CD and website address by late 2003 2) Published by partners. 3) Published by partners. Feedback from national and regional decision-makers. 4) Project reports from sessions, evaluations from trainers. Project newsletter. 5) Successful University graduation and qualification. 6) Press cuttings, interviews, poster & website visitor data. 7) Completing measurable indicators under Activities	1) Permission granted from source data collaborators for full or partial data release. 2) Biodiversity mapping and analysis yielding results. 3) Wide Colombian institutional consultation and involvement forthcoming in this process. 4) Institutional budgets and strategy continue on track among project partners 5) Recruiting suitable students in Colombia for the course. 6) Public are open to awareness campaign. 7) International institutions participating and permitting public release of information.
Activities 1) Compile species-locality data for birds from museum specimens and all literature sources. 2) Collect unpublished data from individual ornithologist's in a self-recording database. 3) Rapid fieldwork surveys undertaken at key areas lacking data or checking congruency of historical sites. 4) Synthesis of data from above activities into an integrated Darwin Database to analysis with GIS components and WorldMap to feed Outputs.	**Budget:** Research staff =£229,010 Travel = £18,000 Overheads = £15,020 Admin./printing = £7,100 Capital equipment = £1,200 Miscellaneous = £ 16,233 Total = £329,871 **Note:** Matching funds; £ 170,118 Darwin Initiative: £ 159,753	i) Receipts and NHM accounting procedures. ii) Audits. iii) Interim reports. iv) Project internet newsletter every six months. v) Field reports vi) Website. vii) Database published in CD. vii) Institutional publications. viii) Scientific publications.	1) Cooperation of museum curators in Europe and North America are sustained. 2) Cooperation of ornithologist's and birders making personal data available. 3) Providing safe access is available to target field study sites across Colombia. 4) Suitable Darwin Database constructed for modelling.