Darwin Initiative for the Survival of Species

Final Report

1st September 2005 – 31st August 2007

Falkland Islands Invertebrates Conservation Project

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Basic Project Details

Project Ref Number	*13/022*
Project Title	*Falkland Islands Invertebrates Conservation Project*
UK Contract Holder Institution	*Falklands Conservation UK*
Collaborator(s)	*Falklands Conservation FI* *Falkland Islands Government* *University Museum of Zoology, Cambridge* *Natural History Museum (London)*
Darwin Grant Value	*£115,173*
Start/End dates of Project	*1 September 2004 – 31 August 2007*

Project summary and background

The UN Convention on Biological Diversity (CBD) was extended by ratification to the British Virgin Islands, the Cayman Is., Gibraltar, and St Helena and its Dependencies in 1994; the remaining UK Overseas territories (OTs), including the Falkland Islands (FI), are not yet signatories. The Falkland Islands are working towards the goal of CBD ratification and intrinsic to this process is a requirement to address the conservation needs of invertebrate species. Preliminary studies revealed great bio-geographic significance of the Falklands invertebrate fauna and strong indications of a high level of endemism. However, as in most of the OTs, knowledge of Falkland Island native insect species was far from complete, precluding the development of invertebrate Biodiversity Action Plans (BAPs). A conservation review of the OTs carried out by the UKOTs Conservation Forum (then known as the UK Dependant Territories Conservation Forum) in 1996 identified the necessity to prepare updated invertebrate species inventories and records of geographic distribution in order that the data was available to inform the process of CBD ratification.

The purpose of this Project was to advance the knowledge of Falkland Islands' invertebrates in order to provide for their protection and to develop sustainable policies to ensure their long term survival. The main activities undertaken to achieve these aims were: the collection of baseline invertebrate inventories via systematic field surveys and subsequent taxonomic analysis; the creation of resources and expertise to enable survey and monitoring for invertebrate conservation to continue after the end of the Project via training courses and the production or reference materials.

A secondary aim of the project was to raise awareness of invertebrate conservation within the Falkland Islands and the wider world. Awareness of invertebrate conservation issues has been raised through 10 local press articles, 5 radio interviews, 10 project newsletters (the 10th is still in preparation), article in 'Wildlife Conservation in

the Falkland Islands', Falkland Conservation webpage sections on invertebrates, the distribution of butterfly recording calendars in the Falkland islands, the publication of a laminated invertebrates field guide in collaboration with the Field Studies Council (in prep), an invertebrate schools pack for the Falkland Islands, 3 school field work trips and follow up classroom sessions, half a dozen conservation WATCH group events, and over a dozen open talks and lectures both in the Falkland Islands and in the UK.

The main project outputs (as detailed in the Project Log Frame Appendix 1) have been achieved as follows:

1. Important invertebrate habitats and rare/threatened species identified for protection.

Systematic surveys of the invertebrates of the Falkland Islands, the largest of the UK's Overseas island Territories (ca. 12,000 km^{2} or half the size of Wales) were carried out. Fifteen main localities were thoroughly surveyed. These were spread, 5 each, between East and West Falkland (introduced rodents present) and Carcass Island (rodent free) to obtain baseline data on species presence/absence. In addition, further qualitative surveys were carried out in localities and habitats of specific interest across the Falkland Islands. These include notable surveys on New Island and Sea Lion Island (Ramsar site). The collections made are still in the process of taxonomic analysis which will take some years to complete. This ongoing process has already led to the identification of important invertebrate habitats and rare/threatened species, and the descriptions of species new to science. This data will be produced as a final report in September 2008 and used to advise the eventual introduction of the Convention on Biological Diversity, and implementation of Biodiversity Action Plan and the Falklands Environment Charter.

2. A Falklands Invertebrates Conservation Plan agreed

The Project continues to advance the knowledge of Falkland Island invertebrates as taxonomic analyses are completed. This data will be produced as a report to the Falkland Islands Government in December 2007 (to be updated in September 2008), and used to advise the eventual introduction of the Convention on Biological Diversity, and implementation of Biodiversity Action Plan and the Falklands Environment Charter.

3. Resources produced to enable identification and long term monitoring

A Falklands Invertebrates Conservation Report has been created as a resource for invertebrate conservation in the Falkland Islands. This three volume report comprises a volume of instructions for field survey, species identification, data management and collection curation; a volume reporting on the base line data collected by this project; and a volume concerning invertebrate conservation strategy in the Falkland Islands. As taxonomic work is still continuing, this report will be considerably updated in September 2008. In addition four scientific papers have been produced with many more in various stages of preparation to be published over the next few years. A pinned invertebrate reference collection has been produced and will be housed in the new Falklands Conservation wildlife centre due to open in Stanley in 2008. Utilising these resources Falklands Conservation has introduced invertebrate collection into its annual programme of field trips.

4. *Falkland Island residents and Falklands Conservation staff trained in basic invertebrate identification techniques and curation of the collection*

Twenty nine Falkland Islands residents (14 more than the original target) have completed a two-week course in basic invertebrate taxonomy and survey work.

The purpose of the project has been achieved with no notable changes to the project plan.

Scientific and technical assessment

Resources and expertise utilised during the project have been of the highest quality. With respect to data collection in the Falkland Islands, Falklands Conservation (Falkland Islands branch) provided logistic support for all field work, including access to transportation and computing, communication and laboratory resources. Training facilities for the invertebrate course were also provided by Falklands Conservation including venues, PowerPoint projectors and laboratory space. Taxonomic analysis of samples has been greatly aided by access to the collections and taxonomic expertise of the Natural History Museum (London) and the University Museum of Zoology Cambridge.

Project impact

The completion of planned invertebrate surveys has accomplished the main project aim of producing baseline date of invertebrate biodiversity in the Falkland Islands. The project has developed and fostered ongoing collaboration between the NGO Falklands Conservation and the Falkland Islands Government. Regular contact and consultation has been maintained with the Falkland Islands operations base of Falklands Conservation and with the Falkland Islands Government. The Project Officer had meetings with the Falkland Islands Government Environment Planning Department and is now working with the Environment Officer who is tasked with producing the Islands' Biodiversity Strategy. On completion of all taxonomic analysis by September 2008, an updated report will be presented to Falkland Island Government to advise the process of joining the CBD.

As UK partners, the Natural History Museum (London) and the University Museum of Zoology Cambridge continue to support the project by providing access to specimens and resources in the UK and office facilities at the University Museum in Cambridge, where the Project Officer is based. The Project is providing taxonomic materials for researchers in the following countries: Canada, the USA, Norway, Finland, the Czech Republic and New Zealand. The Project Officer has continued to inform the South Atlantic Working Group of the Overseas Territories Conservation Forum of the Project's progress.

Project outputs and outcomes

The status of the main Project outputs can be seen in the table below and in Appendix 1 against the LogFrame. Outputs 1 – 3 are constantly developing as a result of continued data input from ongoing taxonomic analysis.

Target Output	Outcome	Comment
Output 1 Important invertebrate habitats and rare/threatened species, identified for protection.	A database has been established recording invertebrates distribution. Specific habitats have now been identified as rich in invertebrates (e.g. islands without rat infestation, tussac grass). It is unlikely that particular areas will be identified solely for invertebrate importance. But it will be recommended that they are included in an assessment for any statutory protection. Key species have been selected in the Project Report for legal protection.	The Falkland Islands Government has not allocated sufficient resources to effect protected area declarations or legal protection for species within the term of this Project. Progress is expected on this over the next year. Project reports are structured for easy input into such protected area designations. FC has completed Important Bird Area declarations and is currently addressing Important Plant Areas. Invertebrates will now form an integral part of an assessment of sites as Key Biodiversity Areas. A Biodiversity Action Plan is now timetabled for completion in the next 6 months.
Output 2 A Falklands Invertebrates Conservation Plan agreed	The Invertebrates Conservation Plan is being provided to FIG for incorporation in the FI BAP.	
Output 3 Resources produced to enable identification and long term monitoring	A Falklands Invertebrates Collection has been established. A guidance manual for invertebrate identification and collection has been produced. A laminated sheet for field identification (produced in partnership with the Field Studies Council) is in preparation and will be published early in 2008. A new check list of insects has been produced and will shortly be available on the FC website.	The Invertebrates Collection is not yet set up in Stanley because of an imminent change of premises by FC. It will be established in 2008.
Output 4 15 Falkland Islands residents trained in basic invertebrate identification techniques and curation of the Collection	29 people have attended invertebrate training courses in the Islands, including Falklands Conservation staff.	A specific member of staff to take responsibility for invertebrate monitoring and encourage trained volunteers to assist with this is under consideration by Falklands Conservation.

. The following table lists the publications arising from this project.

List of Project Publications

Title	Type	Author (s)	Reference	Status
The earthworms (Oligochaeta: Acanthodrilidae, Glossoscolecidae and Lumbricidae) of the Falkland Islands, South Atlantic Ocean	Scientific paper	Reynolds, J. W. & Jones A. G	Megadrilogica, 10 (10):75-87	Published (2006)
Invertebrate conservation in the Falkland Islands	Scientific paper	Jones A. G.	Oryx, 40 (1):12-13	Published (2006)
Insects in the UK Overseas Territories: a short review of endemism with an introduction to the `Falkland Islands Invertebrates Conservation Project,	Scientific paper	Jones A. G.	Antenna, 30 (1):14-29	Published (2006)
Insects of the Falkland Islands	Wall calendar	Jones A. G.	Published by Falklands Conservation	Published (2006)
Insects of the Falkland Islands	Schools pack	Jones A. G.	Published by Falklands Conservation	Published (2006)
Falkland Islands Invertebrates Conservation Project *Project Report No.1*	Report	Jones A. G.	Published by Falklands Conservation	Published (2005)
Falkland Islands Invertebrates Conservation Project *Project Report No.2*	Report	Jones A. G.	Published by Falklands Conservation	Published (2006)
A Future Strategy for Terrestrial Invertebrate Conservation in the Falkland Islands	Report	Jones A. G.	Published by Falklands Conservation	Published (2006)
The Falkland Island Invertebrate Conservation Project Report, Volume 1: *Practical techniques for invertebrate survey, species identification and collection curation*	Report	Jones A. G.	Published by Falklands Conservation	In press
The Falkland Island Invertebrate Conservation Project Report, Volume 2: *Survey results (2004-2007)*	Report	Jones A. G.	Published by Falklands Conservation	In press
The Falkland Island Invertebrate Conservation Project Report, Volume 3: *Invertebrate conservation strategy*	Report	Jones A. G.	Published by Falklands Conservation	In press
Terrestrial Invertebrates of the Falkland Islands	Laminated field key	Jones A. G.	Published by Field Studies Council	In prep.
The Myriopoda and Isopoda of the Falkland Islands	Scientific paper	Jones A. G.	-	In prep.
Syrphidae of the Falkland Islands	Scientific paper	Dawson A & Jones A. G.	-	In prep.
Lepidoptera of the Falkland Islands	Scientific paper	Dawson, AW & Jones A. G.	-	In prep.
Coleoptera of the Falkland Islands	Scientific paper	Hammond P. & Jones A. G.	-	In prep.
Aphids of the Falkland Islands	Scientific paper	Jones A. G.	-	In prep.
A genetic database of Falkland Islands Coleoptera	Scientific paper	Vogler A. & Jones A. G.	-	In prep.

While this Darwin Project is now over, ongoing taxonomic analysis of the project material continues to provide additional data and will do for some time. As a result additional Project outputs are likely to be produced in the future.

Project Expenditure

Darwin Grant Expenditure:

Cost heading	**2004/05** 7 mths	**2005/06***	**2006/07**	**2007/08** 5 mths	**TOTAL Claimed**

Variations to Darwin Budgeted Costs

Project Operation and Partnerships

Falkland Islands Partners

a) Falklands Conservation, Falkland Islands

Falklands Conservation is the only Falklands-wide environmental group in the Falkland Islands. It has been closely involved with this Project from the outset. The involvement and input of this local base in Stanley has proved essential to the success of the Project's fieldwork element. At all levels staff, volunteers and Trustees have given it their wholehearted support. 29 of them completed the Project's 'Invertebrates of the Falkland Islands' training course, including 4 of the current 8 members of staff.

At the start, the Falkland base took leading role in planning fieldwork and liaising with landowners, including identifying areas likely to be important for invertebrates. Permissions to access islands or and privately owned sites were negotiated, not always easy, and in some cases a keen interest in the work resulted.

It was able to effectively promote the project with local media, Government and other stakeholders. This resulted in an increased interest in invertebrates and subsequent rise in enquiries, reports and sightings. Visits, lessons and lectures were arranged with the local Community, Infant/Junior School (and Falklands Conservation's own WATCH Group for children), and links made with their other conservation projects e.g. Education and Citizen Science - to the additional benefit of them all. The public were kept informed on relevant issues of concern (e.g. a 'plague' of European earwigs in Stanley).

In particular, an excellent base for fieldwork operations was provided with secure storage facilities and provision of essential resources – vehicles, equipment and communications with training provided to ensure safe working practices in a part of the world where physical conditions can be challenging.

b) Falkland Islands Government

The Government has taken a keen interest in this Project, supporting it financially over its full term. Two Officers (Dominique Guidicelli and Helen Otley) from the Environmental Planning Department have taken part in the training courses. On each fieldwork visit, the Project Officer met with the Environmental Planning Department staff to discuss progress and project work. The Government is now keen to ensure that conservation and protection of invertebrates is in included in its Biodiversity Strategy (in preparation), taken into account in key wildlife site management plans and proposed developments where appropriate.

UK Partners

Both these institutions will hold pinned collections of Falkland invertebrates

a) University Museum of Zoology, Cambridge (Cambridge University)

The Museum provided a UK base (office and laboratory space, plus communications) for the Project Officer within its Entomology Department. This proved a successful arrangement with benefits accruing to both parties. Expert advice was on hand both to help with project work, and to provide contacts for further consultation and museum collections and reference works were available. The Project took part in a number of Museum and local events, which helped raise its profile outside of the Museum.

b) Natural History Museum (London)

Full access to the Museum's Entomology Department and collection was generously provided. A fee was negotiated to enable specialists to assist with taxonomic queries and difficult taxa. Museum staff also undertook genetic analysis of beetle species and a joint paper describing a genetic database of Falkland beetles is currently in prep.

Monitoring, evaluation and learning

Project progress has been reviewed in fortnightly meetings between the Invertebrates Project Officer (Dr A Jones) and the Project Leader (FC UK Executive Officer, Ann Brown). Annual review reports are also produced for Falklands Conservation. The purpose of these reports has been to both inform Falklands Conservation (staff and Trustees) and Falkland Islands Government of the previous year's progress and to set out a plan for the next 12 months. This successfully allowed those involved to make recommendations to the planned implementation of the Project

An annual Project Report has been submitted to Falklands Conservation Trustees who have reviewed Project performance and advised on the Project's direction. In all cases Trustees reported back a positive evaluation of the work. On the basis of this a strategy for next 20 years invertebrate study for the Falkland Islands has been produced.

This Project has developed a new and cooperative way that Falklands Conservation can work with academic bodies and Museums. These key links will be maintained and the experience used to benefit other project.

There is now a substantial interest in the Islands by the public to learn about their invertebrates as borne out by the popularity of the training courses. We need to tap into this enthusiasm for the benefit of its protection and conservation.

Darwin Identity

As Darwin himself visited these Islands the image of Darwin is quite well known there. This fosters a greater interest in work related to his name such as the Darwin Initiative. This Project has at every opportunity referred to the support of the Initiative – in the local press (*Penguin News*), local radio (Falkland Islands Radio Service), at talks and events and on its training courses (all participants were provided with a Darwin folder). In addition in Project Newsletters and Reports the Darwin Initiative support has been acknowledged.

Leverage

Because of the support granted by the Darwin Initiative, the Falkland Islands Government and the Shackleton Scholarship provided funding totalling an additional £31,000 for the Project.

It is particularly challenging to fund projects of this nature in the UK's Overseas Territories, who are not eligible to apply to a number of sources including the Lottery and many charitable trusts.

Sustainability and Legacy

The main legacy of the Project will be in the information it has already, and will continue to, provide Falklands Government to aid them in their progress to implement the CBD in the Falkland Islands. It has made a significant contribution to increasing knowledge about the biodiversity of the Islands.

The Project has raised awareness of invertebrate conservation issues in the Falkland Islands particularly in the younger generations who have been taught about invertebrates at school and taken part in conservation WATCH group activities. It is hoped that this will be one of the main project legacies in the Islands, with the next generation of Island policy makers having a better understanding of invertebrate conservation issues and thus being better placed to make decisions affecting the Islands' endemic biodiversity heritage. In this respect, they will be aided by the resources left by the Project - in particular, the Islands invertebrate reference collection and reference materials. These, along with the training provided to Falkland Conservation staff, have allowed Falklands Conservation to incorporate invertebrate monitoring and protection into its annual programmes.

This Project has been successful because never before has such a large survey of Falkland invertebrates been completed, and as a result new species have been discovered and described, and habitats important for rare and/or endemic species identified. In fact, the amount of data collected and the diversity of the fauna collected will mean that it will still take some years to complete the taxonomic work needed to accurately describe the entire invertebrate collection and identify and describe all the new species discovered. The information already compiled, however; is more than sufficient to advise on immediate conservation policy for the Islands.

Appendix 1: Report of progress and achievements against Logical Framework

Project summary	Measurable Indicators	Progress and Achievements April 2006 - March 2007	Actions planned for post project application
Goal: *To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve* *The conservation of biological diversity,* *The sustainable use of its components, and* *The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources*			
Purpose To advance the knowledge of Falkland Island invertebrates in order to provide for their protection and to develop sustainable policies to ensure their long term survival.	Key areas given statutory protection as nature reserves, national parks or sanctuaries. Key species on statutory list of protected species. Invertebrates included as part of the Falkland Islands Biodiversity Strategy. Expertise established within the Islands to effect long term monitoring.	It is too early for points 1-3 to be effected. Established regular dialogue with FIG Environment Officer on invertebrate issues. Expertise is being established with 29 participants having now completed the Invertebrates Conservation Course. A volunteer group to undertake long term monitoring is in its early stages of formation.	Continue to feed information to relevant NGOs, landowners and Government. Work with FIG Environment Officer on invertebrates section of FI Biodiversity Strategy. All course graduates to attend a final workshop supporting the development of a Falklands Invertebrates Group.
Output 1 Important invertebrate habitats and rare/threatened species, identified for protection.	Database established recording invertebrate distribution and 'hot spots' of conservation importance. Local Red Data List published.	Database expanded and inputted into a wider Recorder database of Falklands biodiversity. High altitude and tussac grassland habitats identified as of particular conservation importance.	
Activity 1.1 Field surveys to collect specimens for identification		The final and third field season has now been completed and all the samples returned to the UK for identification (approximately 1000 assorted vials). For each specimen the following data is recorded: location, habitat type, date, and collection method.	
Activity 1.2 Taxonomic analysis of specimens and collation of specimen data		Taxonomic analysis of project samples continues and species distributions and habitat type associations described.	
Output 2 A Falklands Invertebrates Conservation Plan agreed.	Consultation on Plan under-taken and presented to Falkland Islands Govt.	Project output is being assessed and applied to long term plans.	

Activity 2.1. Preparation of an Invertebrates Strategic Plan		An Invertebrates Strategic Plan has been produced and focuses on the future commitments of FC. It has been approved by Trustees and covers the period 2006 – 2026.
Activity 2.2. Major contributor to the Falkland Government Biodiversity Strategy		Contributions to the Biodiversity Strategy on invertebrates will be made over the next year. This will then have wide public consultation.
Output 3 Resources produced to enable identification and long term monitoring.	A Falkland Invertebrates Collection established and identification publications written.	As taxonomic work enters its final stages the data collected will be disseminated into resources including collections, keys and publications. Collected specimens must be identified before these can be produced.
Activity 3.1 Species Collections curated		A cabinet for the Falkland Islands invertebrates Collection has been prepared and shipped to the Islands. A guide on curation of the Collection has been produced. Collections of processed materials are being deposited at the Natural History Museum as they become available.
Activity 3.2 Laminated key		A Laminated id key is being prepared covering all FI terrestrial invertebrate orders. This is being published in collaboration with the Field Studies Council.
Activity 3.3 Taxonomic papers		Several taxonomic papers are in preparation which will key out specific taxa including Coleoptera, Lepidoptera and the Syrphidae
Output 4 15 Falkland Islands residents trained in basic invertebrate identification techniques and curation of the Collection.	Training Programme undertaken.	29 Islanders have now completed the FI Invertebrates Training Course.
Activity 4.1 Third course completed		6 took part in the third and final course.