Darwin Initiative for the Survival of Species

Annual Report

1 April 2006 – 31 March 2007

Falkland Islands Invertebrates Conservation Project

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Darwin Project Information

1. Darwin Project Information

Project Ref Number	*13/022*
Project Title	*Falkland Islands Invertebrates Conservation Project*
Country(ies)	*Falkland Islands*
UK Contract Holder Institution	*Falklands Conservation UK*
UK Partner Institution(s)	*University Museum of Zoology, Cambridge* *Natural History Museum (London)*
Host country Partner Institution(s)	*Falklands Conservation FI* *Falkland Islands Government*
Darwin Grant Value	*£115,173*
Start/End dates of Project	*1 September 2004 – 31 August 2007*
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	*1 April 2006 – 31 March 2007 (3)*
Project Leader Name	*Ann Brown*
Project website	*www.falklandsconservation.com*
Author(s), date	*Ann Brown & Dr A Jones*

1. Project Background

This Project will undertake a systematic survey 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). It will be the first time that this has been attempted. Preliminary studies have revealed great biogeographical significance of the Falklands invertebrate fauna and strong indications of a high level of endemism. It will significantly advance the knowledge of Falkland Island invertebrates as part of a programme to introduce the Convention on Biological Diversity in the Falklands, implement a Biodiversity Action

Plan and the Falklands Environment Charter. It will identify key species, particularly endemics, including their distribution and ecology, in order to provide for their protection and recommend sustainable policies to ensure survival in the long term. It will educate and train Islanders and FC staff in the identification and monitoring of Falkland Islands' invertebrates. To support this purpose it will enable FC to introduce invertebrate collection into its annual programme of field trips and projects. It will support FC's staff taking on responsibility for an invertebrates database, with capture of data and records both during the course of the Darwin Project and well beyond.

2. Project Partnerships

Regular contact and consultation has been maintained with the Falkland Islands operations base of Falklands Conservation and with the Falkland Islands Government. Logistical support and office facilities were again provided for the 10-week field work visit (September – November 2006). The Project Officer had meetings with the Falkland Islands Government Environment Planning Department and is now working with the newly appointed Environment Officer who is tasked with producing the Islands' Biodiversity Strategy. This is an essential precursor to the Falkland Islands signing up to 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. In addition to this, under the supervision of the Project Officer, this year a third year student at Cambridge University has been working on the identification of Falkland flies as part of her final year project.

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.

3. Project progress

Note: The Project began on 1st September 2004. The Project started 5 months later than stated in the Application timetable as a result of a late decision to approve this Project, which was on a reserve list.

3.1 Progress in carrying out project activities

The main achievements of 2006-07 have been the ongoing taxonomic work and completion of a third field season. This took place in September – November 2006 and re-visited the same 15 main sample sites surveyed in the second field season but at a different time of year to record seasonal variation. Sites comprised 5 habitat types as follows: 3 beach sites, 3 tussac grassland sites, 3 oceanic heath sites, 3 feldmark sites and 3 settlement sites. These 15 sites were separated between three Islands, East Falkland and West Falkland (both having introduced rodent populations), and Carcass Is (rodent free), such that each island had a full set of sites covering each one of the 5 main habitat types; so we had representatives of all main habitat types, with and without introduced rodents (see map, Annex 3).

For each of the 15 main sites: a malaise trap was run for 5 days, 20 pitfall traps were run for 5 days, 4 Tullgren funnels extractions were run for 5 days (containing *Senecio littoralis* for the beach site, *Poa flabellate* for the tussac site, *Cortaderia pilosa* or *Empetrum rubrum* for the oceanic heath site, and *Bolax gummifera* for the feldmark

site; Tullgrens were not used for the settlement sites), 5 hours hand collecting, and 2x 3-hour moth trapping sessions. All macroscopic invertebrate groups were collected including Acari and Collembola. Unseasonally cold and snowy weather conditions resulted in a reduced number of specimens collected compared with the second field season. Despite this, several taxa were recorded for the first time.

Records were also collected from The '*Insects of the Falkland Islands'* butterfly recording calendar, which was distributed freely to all landowners in the Falkland Islands in December 2005. The success of the butterfly calendar in conjunction with actively pursuing good personal and project relationships with farmers and landowners has significantly raised the Project's profile and fostered an appreciation of invertebrate conservation within the Islands community.

Taxonomic work continues in the UK. Data arising from the taxonomic processing of the samples collected is being continually collated and we are well on the way to producing updated species check lists and final project documents.

3.2 Progress towards Project Outputs

A. Important Invertebrate Habitats and Rare Species Identified for Protection

Survey work has identified tussac grassland habitats as one of the most important for native invertebrate species. While most species have island wide ranges and are found in most habitat types, tussac grassland is particularly important for endemic Coleoptera and Hemiptera. All the data has now been collected to identify important habitat types and rare species and is currently being processed to that end.

B. Falklands Invertebrates Conservation Plan agreed

A strategic invertebrate policy for next 20 years (particularly for monitoring) has been agreed by FI Trustees. This policy describes a plan for annual monitoring of key sites. The ongoing compilation of species records being currently collated by the project will be used to advise an invertebrates conservation plan.

C. Resources Produced for long term identification and monitoring

A laminated field guide key to Falkland invertebrates is currently under development in collaboration with the UK's field studies council. Species records are being added to a 'Recorder' electronic database. Taxonomic work continues and several papers keying out the Lepidoptera, Coleoptera and Syrphidae are in preparation.

D. Falkland Islanders Trained in identification and curation techniques

The final training course instructed 6 individual, making a total of 29 people trained (this compares to a total of 15 expected in the initial project plan). Course graduates have indicated interest in forming an invertebrates group. This group is currently being developed.

3.3 Standard Output Measures

Figure 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	TOTAL
15A/15B	Articles in local paper	3	3	4		(10)
15B	News on FC website	1	1	2		(4)
19A	Radio interviews FIRS	2	2	1		(5)
16A	Project Newsletters	1	4	4		(9)
16A	Recording Calendar		Distributed	Records collected		
6A	Islanders trained on 2 week course	15	8	6		(29)
6A	School lectures	2	1	0		(3)
8	Field work weeks	8	10	10		(28)
12A	Inverts. database	Established	Expanded	Expanded		
14B	Project talks	0	7	4		(11)
-	Strategy Report			1		
New - Project specific measures						

Figure 2 Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (e.g. contact address, website)	Cost £ (if applicable)
Note: Several manuscripts are currently in prep. However, these will not be completed until the taxonomic work is finished. These include papers on the taxonomy of Lepidoptera, Diptera and Coleoptera.				

3.4 Progress towards the project purpose and outcomes

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.

In the final field season (September to November 2007) approximately 1000 sample vials (containing 1 – 1000's of specimens) were collected from three sets of 5 sites comprising 5 different habitats types. Set 1 being on East Falkland, 2 on West Falkland and three on Carcass Island. This data of species presence/absence, distribution and habitat type associations has considerably increased our knowledge of Falkland invertebrates. Preliminary observations based on this expanding data set have already identified key facts pertinent to successful and sustainable conservation management of specific invertebrate species, in particular the importance of rare upland Tussac grassland habitats. Analysis of the final dataset should enable much better understanding Falkland invertebrates to inform sustainable management and protection.

3.5 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

The impacts of the current project on Falkland biodiversity are likely to take many years to be observed and may be difficult to directly quantify. The data already collected however, will provide a basis for the inclusion of invertebrate species into protected areas (including species not previously known to science), and being one aspect facilitating the Falkland Islands becoming signatory to the CBD.

4. Monitoring, evaluation and lessons

Project progress is 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 is 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 allows those involved to make recommendations to the planned implementation of the Project.

The purpose of this project is 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. Due to the ongoing nature of the work the outcomes of this project have yet to be realised. Therefore, it is not yet possible to measure the indicators of achievement.

5. Actions taken in response to previous reviews (if applicable)

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6. Other comments on progress not covered elsewhere

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7. Sustainability

The Falkland Islands community is relatively small, with a strong interest in their environment. As a result of three years of project field work, the projects profile is high within the Islands, both in the Capital, Port Stanley; and in the outlying communities.

Every opportunity has been made to raise the profile of the Project using local Falkland media sources. During the past 12 months there has been a radio interview and three articles in the local press. In addition posters about the project are being displayed in the Jetty Visitor Centre, Stanley.

The effect of this promotion was evident from the continued demand for places on the Invertebrates Taxonomy Course and the increasing number of enquiries about invertebrates received by the Project Officer and by Falklands Conservation.

A long term (20 year) strategy to address invertebrate monitoring and conservation in the Falkland Islands, continuing the momentum of the current Project, has been produced and has now been agreed by Falklands Conservation Trustees. This entails annual survey work to monitor the species present in key sites/habitats and identify and respond to conservation threats. The legacy of the current project will be used to incorporate a strong invertebrate conservation component to core Falklands Conservation activities, sustaining the projects outputs, outcomes and impacts into the future.

8. Dissemination

Project updates and developments have been reported in quarterly newsletters distributed to Falklands Conservation and Watch Group members and made available to all other interested parties. All project newsletter and additional project developments have been added to the new Falklands Conservation web site (under development). In addition, articles have been published in the Falkland Islands press and interviews broadcast on the Falklands local radio service. The dissemination of this material was targeted to reach as many Falkland Island residents as possible.

After the official end of this project regional dissemination will continue in the form of an annual 'Invertebrates Newsletter' and radio interview. This will be funded via Falklands Conservation core funding supported by the Falkland Islands Government.

9. Project Expenditure

Figure 3 Project expenditure <u>during the reporting period</u> (Defra Financial Year 01 April to 31 March)

Item	Budget (please indicate which document you refer to if other than your project schedule)	Expenditure	Balance

10. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

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Annex 1: Report of progress and achievements against Logical Framework for Financial Year: 2006/07

Project summary	Measurable Indicators	Progress and Achievements April 2006 - March 2007	Actions required/planned for next period
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*			*(do not fill not applicable)*
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	Consultation on Plan under-taken and presented to Falkland Islands Govt.	Project output is being assessed and applied to long term plans.	

Plan agreed.		
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 will be shipped to the Islands in May 2007. A guide on curation of the Collection will be produced. Collections of processed materials are being deposited at the Natural History Museum as they become available.
Activity 3.2 Laminated key		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.

Annex 2: Project's full current logframe

Project summary	Measurable indicators	Means of verification	Important assumptions
Goal: *To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor 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 Action Plan Expertise established within the Islands to effect long term monitoring.	Appropriate areas of invertebrate importance declared protected areas. Wildlife legislation amended to include key species. Biodiversity Action Plan published. Invertebrate Advisory Group set up.	Falkland Is. Government allocates adequate time and resources to effect declarations, amend legislation and produce Biodiversity Action Plan. Sufficient interest is generated about invertebrates to recruit, train, and maintain a long term interest by a number of Falkland residents.
Outputs Important invertebrate habitats and rare/threatened species, identified for protection. Resources produced to enable identification and long term monitoring. 15 Falkland Islands residents trained in basic invertebrate identification techniques and curation of the Collection.	Database established recording invertebrate distribution and 'hot spots' of conservation importance. Local Red Data List published. A Falkland Invertebrates Collection established and identification publications written. Training Programme undertaken.	Database operational and an invertebrate Local Red Data List published. Key species selected for legal listing. Conservation Plan accepted as part of Islands' Biodiversity Action Plan. Invertebrates Collection in place and available to public. 15 or more Islanders actively contributing to invertebrates programme	Sufficient data can be collected and processed over an adequate area of the Falkland Islands. Islanders are interested in learning more about Falkland Islands invertebrates.
Activities Fieldwork Programme Training Collections Publications Events/Publicity	**Activity Milestones (Summary of Project Implementation Timetable)** Three 2-month fieldwork seasons completed resulting in an invertebrates database established, distribution of species recorded, samples identified leading to taxonomic keys and descriptions of Pterygote insect fauna and a species check list and Red List produced for the Islands. 15 Islanders take part in 3 training courses and support survey/collection work. Teacher training course held for Schools Invertebrates Pack Reference Collection established in Falkland Islands and available to the public. Dedicated Falkland collection donated to Natural History Museum. Schools Invertebrates Pack produced. Scientific papers published. Falklands Conservation Plan and Invertebrates Conservation Manual produced. Public launch of Project. 2 FI radio broadcasts per year. Display produced for Falkland events. Information to FI local press on regular basis. Report in annual 'Wildlife Conservation in the Falkland Islands'. Invertebrates web section on line. 5 articles/presentations outside the Islands.		

Annex 3: Map of the Falkland Islands showing localities mentioned in report section 3.1