Darwin Initiative Annual Report

Important note:

To be completed with reference to the Reporting Guidance Notes for Project Leaders – it is expected that this report will be about 10 pages in length – Submission deadline 30 April 2007

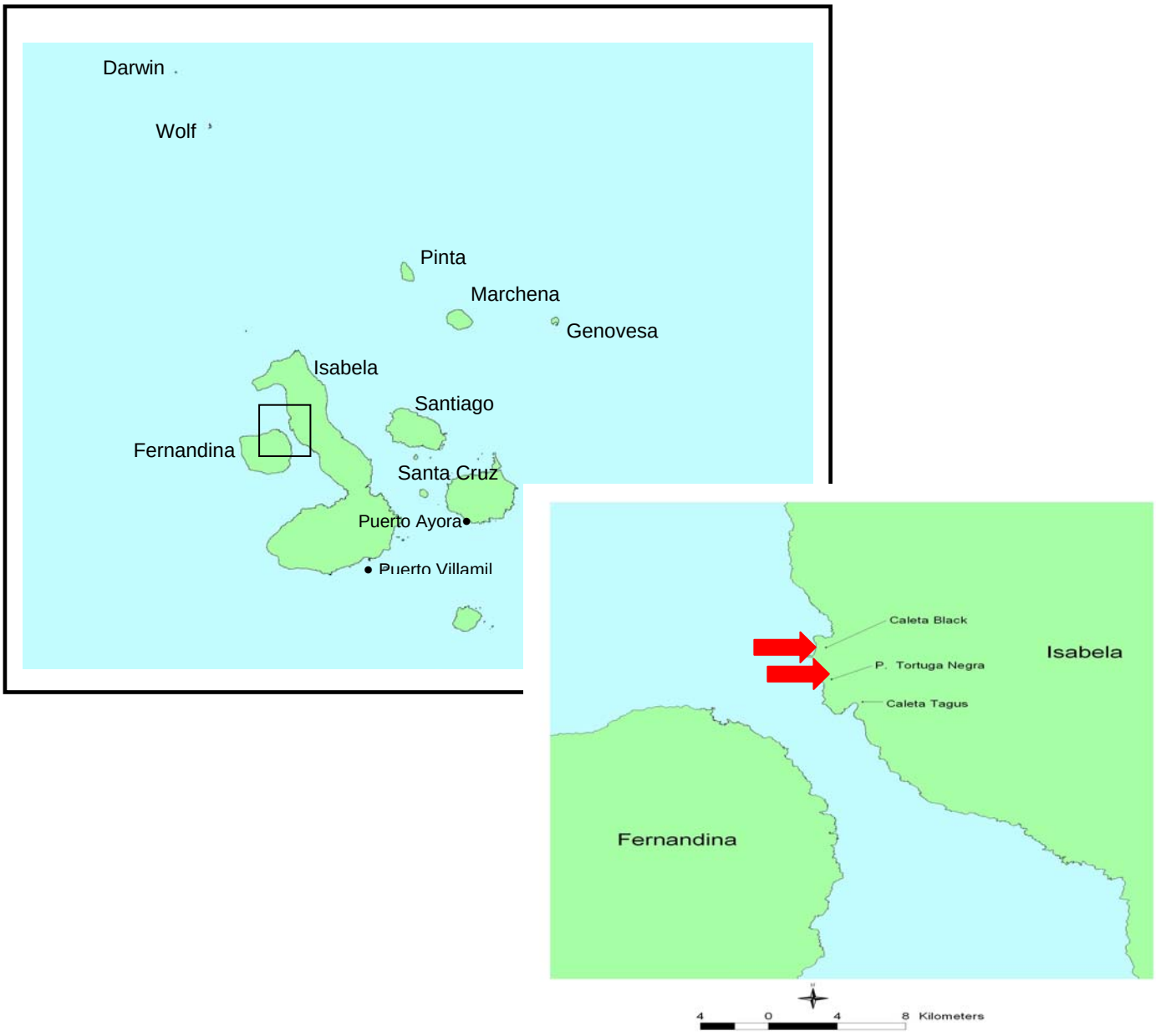
Darwin Project Information

Project Ref Number	15/005
Project Title	CONSERVATION OF THE MANGROVE FINCH (*CACTOSPIZA HELIOBATES*)
Country(ies)	ECUADOR: GALÁPAGOS ISLANDS
UK Contract Holder Institution	DURRELL WILDLIFE CONSERVATION TRUST
UK Partner Institution(s)	n/a
Host country Partner Institution(s)	CHARLES DARWIN FOUNDATION GALÁPAGOS NATIONAL PARK
Darwin Grant Value	£173,500
Start/End dates of Project	1 JUNE 2006 TO 31 MAY 2009
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1 APRIL 2006 to 31 MARCH 2007 ANNUAL REPORT NUMBER 1
Project Leader Name	HYWEL GLYN YOUNG
Project website	None yet
Author(s), date	HYWEL GLYN YOUNG & BIRGIT FESSL, APRIL 2007

1. Project Background

The key goal of this project (the Project) is to assist in the conservation of the critically endangered and geographically restricted Mangrove Finch (*Cactospiza heliobates*) in the Galápagos Islands. This will be achieved through focused field research on the last remaining population of the species, and by means of interventions to control the main recognised agents of decline (i.e. disease and predation). Through an active *in-country* head-starting and release programme, the project will also establish new Mangrove Finch populations in localities from which they have been recently extirpated. The Durrell Wildlife Conservation Trust (Durrell) will assist in skills transfer to build the required institutional capacity in Galápagos. In conjunction with Ecuadorian institutions, the project will implement a medium to long-term action plan to ensure the survival of this species beyond the project lifetime, and thus help Ecuador meet its

CBD obligations.



Map 1. Galápagos Islands, Ecuador, and location of world distribution of Mangrove Finch *Cactospiza heliobates*

2. Project Partnerships

The project has two local partners: the Charles Darwin Foundation (CDF: including Charles Darwin Research Station CDRS) and Galápagos National Park (GNP). Both these organisations are based in Puerto Ayora, Santa Cruz in adjacent offices. CDF works in partnership with GNP, the government authority in charge of conservation and natural resource issues in Galápagos, providing the scientific knowledge required to protect the unique ecosystem of Galápagos. A Memorandum of Agreement has been signed by Durrell and CDF.

The Project partnership has been very effective and well received. Field Manager Dr. Birgit Fessl has been included onto the staff of CDF for convenience and to ensure that she receives

local benefits available to CDF staff. Wages etc. for B Fessl come from Project funds transferred to CDF. HGY and B Fessl have been granted the rare status of Collaborative Scientists by GNP; HGY has also been granted this status by CDF. HGY and Bryan Milstead (CDF) jointly co-ordinate overseeing Project.

Durrell experience with issues involving many aspects of conservation including captive breeding and rearing have been further utilised by CDF for other projects in Galápagos including invitation to HGY and BF to participate in development of an action plan to conserve the Floreana Mockingbird *Nesomimus trifasciatus* (Workshop in March 2007). Durrell also hosted the Island Species-Led Action (ISLA) course in Puerto Ayora in Galápagos in 2006.

The Project has benefited from a close relationship with David Macdonald and Hernan Vargas whose Galápagos based DI project (project id 12018) came to an end in 2006. Data on Mangrove Finch was made available to the Project and rainfall loggers already in place in Isabela are now being used on the finch project. HGY was invited to be external examiner for H Vargas' PhD (Oxford University) and H Vargas agreed to be consultant to Project.

3. Project progress

The Project began with planning meetings in Jersey (June) and Galápagos (June-July) involving representatives of all partners and consultants. Outline plans developed during reconnaissance visit to Galápagos and Mangrove Finch breeding sites in 2005 were refined and roles of partners established. Project consultant Hernan Vargas has provided all his published and unpublished data on Mangrove Finch collected by him over several years of visits to breeding sites. The position of Field Manager was developed and advertised; interviews were held in July and the successful candidate, Dr. Birgit Fessl (BF) started work in October.

3.1 Progress in carrying out project activities

1. Field research programme

BF started a programme of visits to the field sites on Isabela (Playa Tortuga Negra (PTN) and Caleta Black (CB)), visiting 29th November-13th December 2006, 4th-16th January, 5th February-8th March 2007 and 26th March-14th April. Transport to sites is by boat from Puerto Ayora and the field team stay in a temporary tented camp at PTN or at GNP caseta south of PTN.

Field research team consisted of BF, field assistants Segundo Gaona, Fidelino Gaona (GNP) and Sandra Landazuri (CDF). Fidelino Gaona was responsible for invasive species (rats, anis, cats and wasps) monitoring and control procedures.

BF has initiated a wide-ranging research programme principally gathering data on Mangrove Finch numbers (including investigation into most suitable census method) and nesting biology including GPS mapping of nest sites (old and recent). Mangrove Finch and Woodpecker Finch *C. pallida* living in mangrove forest are caught and ringed (23 Mangrove and 1 Woodpecker Finch in Year 1: Annex 3, Table 1); blood samples are taken for genetic and disease analyses (no results are available yet). Re-sightings of ringed birds are shown in Annex 3, Table 2.Data are also collected on rainfall, vegetation and invasive species numbers and success of control measures.

A specific Microsoft Access database was developed by Ian Fisher of RSPB for use by the Project.

Territory mapping has been undertaken at PTN and CB with birds plotted on maps (see Annex 3, Table 3 and Figs 1 and 2 for no. of territories). Different census methods have also been undertaken at sites to identify most reliable and easily repeatable method. Point counts with playback appear to give results closest to territory mapping; however, unpaired birds may have large territories and be following the playback (one ringed individual came to playback five times!). The entire breeding area has been covered and the finch population at both sites estimated at 80 birds. Territory mapping may be time consuming and require two field visits but is more reliable (see Annex 3, Table 4).

Mangrove Finch is believed to only breed in years with moderate to heavy rainfall (El Niño) years. Since December, 41 nests were observed, 27 in PTN and 14 in CB. Nesting activity boosted following higher than average rainfall in February. 17% of the nests were built in December, January and March, whereas 49% were built in February. All 7 nests built in March were second clutches. Only 4 out of the 41 nests produced fledglings, 3 were still active end of March. 41 % never produced eggs: these nests either stayed with a displaying male (6 nests) or with a pair (11 nests). Predation level was between 17 and 24% (6 predated during incubation, one during feeding, 3 nests unknown - either predated or eggs abandoned). However, this percentage could go up to 50%, as several nests with pairs were suspected to be in the egg laying phase and the fact that nests were abandoned could be due to predation events. Another 12 % had abandoned eggs. Reasons for nest abandonment are currently investigated. Some abandoned or predated nests and even nests with recently fledged young were occupied immediately by Small Ground Finch *Geospiza fuliginosa* or Medium Ground Finch *Geospiza fortis* suggesting that finch nests are an important and limiting resource in mangrove habitat.

Late March/ beginning of April, five Mangrove Finch nests which had late feeding nestlings were collected and searched for the parasite. All had larvae or pupae, ranging from 11 to 49 (mean: 33.3 parasites / nest). For three nests we know the number of nestlings: thus parasite load per nestling ranged between 5.5 and 18.5 (mean: 12.66). Previous studies in Santa Cruz revealed a mean parasite load per nest of 48 and between 21 and 28 parasites per nestling. Thus, numbers are lower than on the main island Santa Cruz, but still high enough to weaken or even kill nestlings.

A student, Adair Muth, has begun a study of the fly parasite *Philornis downsi* in Galápagos aimed at developing methods for capture and control of this fly. The Project is assisting in this study and engaged a volunteer for two months to assist Adair: the main aim was to develop an attractant for the flies. Different mixtures, milk and sugar based, known to attract flies were tested but initial trials were unsuccessful. However, in March, several further mixtures based on vinegar and banana did appear to show success. The study continues.

2. Captive rearing programme

The initiation of a captive rearing programme for Mangrove Finch was delayed through planning concerns and needs to link with proposed conservation measures for Floreana Mockingbird. Plans for aviary design and equipment requirements were agreed in 2006 and the Floreana Mockingbird Workshop (March 2007) proposed forming strong and effective links with the Project in establishing a trial phase at CDRS in Santa Cruz. Trials in captive husbandry will be undertaken at CDRS using Woodpecker Finch and Galápagos Mockingbird *N. parvulus* as models for Mangrove Finch and Floreana Mockingbird respectively as it has been confirmed that these latter two species will not travel away from their native islands for health and security reasons. Captive trials will develop methodologies for collecting eggs and adults from the wild, rearing and socialising birds, maintaining breeding stock, breeding in captivity and releasing captive bred and reared birds into the wild. Upon completion of trials further aviaries will then be built in birds' native islands and further stock collected.

3. Conservation action

Control of rats, cats, anis and wasps has been undertaken December 2006-March 2007 (Annex 3). Use of poison for rats has proven highly effective and a programme of poisoning with Klerat bait cubes will be undertaken throughout Years 2 and 3. No Avian Pox was observed in any birds, of any species, during field visits. Nests have been checked for *Philornis* but no control methods have been tested at field sites. Study on *Philornis* is underway elsewhere in Galápagos and will be linked into Project at a future date (Project has assisted in funding study in breeding trials to produce *Philornis* stock for studies).

Project has liaised with tourist companies. Few tourists in Galápagos visit sites but 'birding' groups visit PTN in order to see Mangrove Finch. These groups are not allowed into mangroves and have often used tape lures to bring one or more birds to edge of forest. Discussions were held with GNP and tourist access to beach continues but use of tapes has been banned.

4. Capacity building

To date it has proven impossible to attract any student to undertake the proposed study on Mangrove Finch ecology. This is very disappointing as, with full funding and support available, it was believed that suitable Ecuadorian students would come forward at the start of the Project. The position was advertised locally including on television and in universities in mainland Ecuador. The Project has discounted looking for overseas students but is hopeful of a candidate joining soon as interest by two students was positive in March 2007. The Project has funded a short study on *Philornis* in co-operation with a larger study by Adair Muth (see above).

BF has trained GNP staff in aspects of Mangrove Finch ecology and in monitoring techniques.

Co-ordination with Floreana Mockingbird restoration project will establish training programme for aviary staff led by Durrell and BF. Husbandry trials for both bird species will be monitored by Project.

5. Public awareness

Mangrove Finches do not live close to any people and, to date, no public awareness programmes have been undertaken elsewhere in the Galápagos. It is intended that displays on finch will be developed at CDRS and Tortoise Breeding Center in Puerto Villamil. When Mangrove Finches are housed in captivity the aviaries (and trial aviaries) will be strictly 'off view' to all except related staff; however, video links may be possible.

3.2 Progress towards Project Outputs

1. *Institute system for monitoring species' ecology, habitat, genetic status and determinants of population growth*.

Monitoring is underway and different census methodologies are being tested. No results on genetic analysis are available. Monthly reports are produced and circulated to partners and consultants.

2. *Technical skills in GNP & CDF are strengthened to enable long term conservation of Mangrove Finch*.

BF is training GNP personnel in Mangrove Finch monitoring and control of invasive species. No student yet identified and, therefore, this area of development is incomplete.

3. *Species conservation action plan implemented*

Action plan has not yet been developed.

4. *Population limits established and declines halted*.

Not yet established.

5. *Awareness of Mangrove Finch raised in local and international community*

This will be undertaken outside of the breeding season, June-November 2007.

6. *Post-project workplan is in place to continue conservation action plan*.

Not yet applicable.

3.3 Standard Output Measures

Table 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	TOTAL
17A	Steering committee formed	Yes				Yes
14A	Stakeholders meeting establishes project protocols	Yes				Yes
16A	Report from Stakeholders meeting produced and circulated	Yes				Yes
22	Captive facilities built and functioning	Planned				Planned
12A	Electronic databases established	Yes				Yes
12A	GIS of all sites developed	Yes				Yes
12A	Standardised data collection forms produced	Yes				Yes
9	Habitat assessment report produced	No				No
2	2 MSc Students trained	Not started				Not started
16A	Steering committee reports published and end of year summaries circulated	Yes				Yes
	Results of genetic analysis produced	n/a				n/a
14A	PHVA held in Galápagos	n/a				n/a
9	Mangrove Finch Conservation Action Plan published	n/a				n/a
11B	4 Scientific papers produced and submitted	None yet				None yet
15A	Articles produced in UK and National press and for radio broadcasts	3				3
17A	Website area in Durrell and CDF websites established	CDF species profile				CDF
18A	National TV interviews	No				No

Table 2 Publications

Type * (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £ (if applicable)
Newsletter Galápagos News 23: 7	Major funding for the mangrove finch. Glyn Young. 2006.	Friends of Galápagos, edited in UK	www.gct.org	Available to members
CDF e-Newsletter March 2007	100 mangrove finches – how to stop the countdown. Anon. March 2007	Charles Darwin Foundation, Puerto Ayora.	http://darwinfoundation.org/newsletter/english/newest-en.htm	Free on-line
Newspaper article 22nd Sep 2006	Darwin finch could disappear from Galapagos islands	Independent Newspaper, London	http://news.independent.co.uk/world/australasia/article1696144.ece	Free on-line

3.4 Progress towards the project purpose and outcomes

The project purpose is to establish the ecology and population parameters of Mangrove Finch, identify causes of decline, develop measures to arrest decline in numbers and establish a plan to restore populations in areas where extirpated. The principal outcome is the continued survival of this bird and an increase in numbers and distribution. The seriousness of the status and decline of Mangrove Finch has been recognised by GNP and CDF and optimism for success and continuation of project is high in Galápagos.

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

Mangrove habitat is rare in the extremely arid Galápagos archipelago. The Project aims to improve knowledge of mangrove ecosystem through establishing ecology of the highly specialised Mangrove Finch (possibly world's most specialised mangrove-living bird species) and identifying and protecting other mangrove occupants.

4. Monitoring, evaluation and lessons

Project has been monitored by HGY and B Milstead with support from John Fa (Durrell) and Alan Tye (CDF). 2007 has been a successful year for reproduction and success is not yet fully evaluated; however, even after a late start to field work, results are very encouraging.

5. Actions taken in response to previous reviews Not applicable

6. Other comments on progress not covered elsewhere

Genetic analysis of blood samples collected during capture and ringing of Mangrove and Woodpecker Finches has not been possible because of changes underway in government licensing.

7. Sustainability

The Mangrove Finch has been identified, following initiation of Project, as the most endangered bird (animal?) in Galápagos and the importance of this species' conservation is now taken very seriously by GNP and CDF. It has been made highest priority, with Floreana Mockingbird, and is prominent in publicity material from CDF (e.g. on CDF website www.darwinfoundation.org).

Exit strategies have not yet been determined; however, conservation work will now undoubtedly be continued by partners after duration of Project. Exit strategy will be established after recommendations are made at PHVA or workshop on any future release or translocation programmes and new sites identified.

8. Dissemination

Dissemination of results to date has been limited to distribution of reports to partners and consultants and news of Mangrove Finch and Project to members.

9. .

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

I agree for ECTF and the Darwin Secretariat to publish the content of this section

The Mangrove Finch Project has succeeded in raising the profile of the Galápagos archipelago's most endangered bird. Even before results of the first year's fieldwork can be evaluated, interest locally and internationally in this poorly known bird has been significantly increased. Furthermore, the Project has helped promote a new discipline in Galápagos conservation, that of single species led action that has continued, in part, with the development of the Floreana Mockingbird Action Plan. The captive husbandry facility being built at CDRS, to be used for husbandry and breeding trials, will be greatly extended to incorporate both Mangrove Finch and Floreana Mockingbird restoration projects.

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*		*Decline in Mangrove Finch highlighted and species made conservation priority in Galápagos Islands. Project has joined with second highest priority, Floreana Mockingbird, to share expertise and facilities in restoring these birds.*	*(do not fill not applicable)*
Purpose To assist in the conservation of the critically endangered and geographically restricted Mangrove Finch (*Cactospiza heliobates*) in the Galápagos Islands	Stakeholders meeting between key partners held at start of Y1 to identify research priorities. Understanding of species ecology and demography by end Y2. If required, captive management facility set up at CDF HQ mid or end of Y2. PHVA at end Y2 to design species conservation action plan and establish requirements for captive population. CDF & GNP successfully implemented species conservation action plan by beginning Y3. Evidence of stability or growth in Mangrove Finch population and historical sites recolonised by project end	Steering committee formed and key personnel recruited. Initial workplan established through meetings of partners and consultants.	
Output 1. Field research programme: establish basic ecology of species.	Implementation of monitoring programme with regular field visits throughout year.	Site visits have been made regularly from October 2006.	

Activity 1.1 Population surveys, bird ringing and blood sampling, nest success study, habitat surveys. Impact of invasive species studied.		Population surveyed and different census techniques trialled in order to find most easily repeatable method. Estimated size of population is 80 birds. Ringing programme and territory mapping underway (24 finches caught and ringed). 2007 has been a successful year for breeding and nests have been monitored with successes detailed and causes of failure established.
Activity 1.2 Blood samples taken for population genetics study		Blood samples have been collected from 24 birds; however, no analysis has yet been possible.
Output 2. Captive rearing programme	Aviaries will be built to rear finches for restocking and/or restoration and establishment of new populations.	
Activity 2.1. Facility built, birds caught, protocols established		Aviaries have been designed and site chosen. Protocols for initial breeding and management trial phase using Woodpecker Finch have been discussed by partners. Aviaries will be built at CDRS, Santa Cruz: Mangrove Finch will not be moved from Isabela, on completion of trials, further aviaries will be built at Tortoise Breeding Center, Puerto Villamil, Isabela.
Output 3. Conservation action	invasive species controls tested,	
Activity 3.1. Invasive species control methods tested		Trapping and poisoning of rats and cats underway. Smooth-billed ani flocks located, counted and individuals shot. Wasps not considered significant. *Philornis* in nests monitored but control yet undertaken.
Activity 3.2. Monitoring of tourist activity at sites.		Not originally foreseen, tourist activity at sites is monitored and liaison with groups undertaken. Tape lures banned by GNP following request by Project.
Output 4. Capacity building	Y1-3: assess training needs, on the job training.	GNP staff have been trained in field work and basic monitoring of Mangrove Finch at PNG and CB. No further training has yet been possible and no

		MSc student has been identified to date.
Output 5. Public awareness	Y1-3: radio interviews, press releases, newspaper articles, website established. Community based activities on Isabela.	Not yet fully undertaken as no human population close to Mangrove Finch sites and captive programme not begun. Finch has been publicised in CDF displays and newsletters by partners. Project will link with Isabela tortoise clubs to publicise finch among population at Puerto Villamil.

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 benefits arising out of the utilisation of genetic resources**			
Purpose Long term conservation of the Mangrove Finch ensured through intensive field research efforts and building capacity in small population management in partner institutions, CDF and GNP	Stakeholders meeting between key partners held at start of Y1 to identify research priorities. Understanding of species ecology and demography by end Y2. If required, captive management facility set up at CDF HQ mid or end of Y2. PHVA at end Y2 to design species conservation action plan and establish requirements for captive population. CDF & GNP successfully implemented species conservation action plan by beginning Y3. Evidence of stability or growth in Mangrove Finch population and historical sites recolonised by project end	Species conservation action plan; Project reports from partner institutions; Published scientific papers Monitoring programme results Mangrove Finch conservation activities included in long term workplan of CDF and GNP end Y3.	Full cooperation from GNP and CDF will be required
Outputs 1. Institute system for monitoring species' ecology, habitat, genetic status and determinants of population growth.	Protocols for repeatable monitoring established by end Y1. All partners agree key findings of field research at PHVA end Y2; Successful testing of invasive species control measures by end Y2; Genetic analysis completed by end Y2.	Project reports; Published papers; Microsatellite library results published.	Trained staff remain working on project Effective collaboration between project partners
2. Technical skills in GNP & CDF are strengthened to enable long term conservation of Mangrove Finch. Minimum of 2 personnel trained in captive management skills that can be transferred to other species.	4 GNP & CDF staff and 2 university students fully trained by Project Leader in field research, invasive species control and captive management techniques, creation of database management by end Y2; Training workshops, on the job training Y1-2; PHVA run by GNP/CDF to design species conservation action plan end Y2; Meeting to agree on future fund-raising strategy mid Y3; Action plan initiated and led by GNP/CDF in Y3	Project reports; On the job evaluation and at workshops	

3. Species conservation action plan implemented	Monitoring programme running successfully by end Y3; Invasive species control measures tested (Y1-2) and implemented in Y3; Captive rearing and management facility run by GNP at end Y3; Successful trial release of captive reared birds in Y3	Project evaluation at end Y3; Copies of action plan and project reports sent to Darwin Initiative	
4. Population limits established and declines halted.	Monitoring programme will provide data to show trends in population size by end Y3	Published papers; End project report	
5. Awareness of Mangrove Finch raised in local and international community	Radio interviews held; Press releases; International newspaper articles; Reports and scientific papers published; Website created. Community based projects in Isabella and links with existing tortoise programmes and children's clubs here	Transcripts, papers, reports sent to Darwin Initiative	
6. Post-project workplan is in place to continue conservation action plan	CDF & GNP to produce workplan for the continuation of species conservation action plan at end Y3	CDF & GNP annual workplan; End of project evaluation report; DW visit end Y4	
Activities	**Activity milestones (summary of project implementation timetable)**		
1. Field research programme	Y1: research protocols agreed at workshop. Implementation of monitoring.Y1-2: population surveys, bird ringing and blood sampling, nest success study, habitat surveys and monitoring, impact of invasive species study; genetic analysis. Assessment of sites for release of captive reared birds. Y3: continuation of monitoring in all sites including released birds.		
2. Captive rearing programme	Y2: facility built, birds caught, protocols established. Y2-3: captive rearing. Y3: release of captive reared birds to historical sites.		
3. Conservation action	Y2: invasive species controls tested, action plan agreed at workshop. Y3: invasive species control activities implemented.		
4. Capacity building	Y1-3: assess training needs, on the job training. PHVA and conservation action plan workshop. Y3: conservation action plan initiated and led by CDF & GNP.		
5. Public awareness	Y1-3: radio interviews, press releases, newspaper articles, website established. Y2-3 papers written and submitted to peer-reviewed journals. Community based activities on Isabela.		

ANNEX 3 Results Year 1 fieldwork

Ringing

Table 1: Species, gender, site, date, ring number and colour combination of birds caught in Year 1, 2006-2007. MF = Mangrove finch, WP = Woodpecker finch, PTN = Playa Tortuga Negra, CB = Caleta Black, T = Transect, E = Number of the aluminium tag at the periphery. Birds ringed: PTN metal (left leg) and two colours (right); CB metal (right) and two colours (left).

Species	Sex	Site	Date	Ring number	Colour combination
MF	Female?	PTN, T4 100m	1.12.2006	PM001	Red over red
MF	Male	PTN, E61	2.12.2006	PM002	Black over red
MF	Male	PTN, E22	4.12.2006	PM003	Green over red
MF	Male	PTN, E22	4.12.2006	PM004	Yellow over red
MF	Female	PTN, E22	4.12.2006	PM005	Pink over red
MF	Female?	PTN, E22	4.12.2006	PM006	Light blue over red
MF	Male?	CB, E9	8.12.2006	PM007	White over red
MF	Male	CB, E9	8.12.2006	PM008	Pink over black
MF	Male	CB, E9	8.12.2006	PRG12003	Yellow over blue
MF	Female?	CB, E9	8.12.2006	PM009	Red over pink
MF	¿?	PTN, T4 100m	9.12.2006	PM010	Orange over orange
MF	Male	PTN, T4 60m	9.12.2006	PM011	Pink over black
WP	Male	PTN, E25	10.12.2006	PM012	Green over black
MF/WP	Male	CB, E3b	11.12.2006	PM013	White over yellow
MF	Male	PTN, T5/T6	7.01.2007	PM014	White over dark blue
MF	Female	PTN, T4 100m	10.01.2007	PM015	Light blue over black
MF	Male	PTN, T6 140m	11.01.2007	PM016	Green over pink
MF	Male	PTN, T6 140m	13.01.2007	PM017	White over black
MF	Male	PTN, T11 20	14.02.2007	PM018	Light blue over orange
MF	Male	PTN, T6 140	19.02.2007	PM019	Light blue over yellow
MF	Male	PTN, T6 140	27.02.2007	PM020	Orange over white
MF	Female	PTN, T5/6	30.03.2007	PM021	Clear blue over pink
WP	Female	CB, C13-330	11.04.2007	PM022	Orange over blue
MF	Female	CB, C3b	11.04.2007	PM023	Green over green

Table 2. Re-sighting of ringed Mangrove Finch during Year 1, 2006-2007.
Capturing site and re-sighting site were up to 300-400 m distant. pb = playback used.

Bird	Original capture site	Date	Re-sighting site
PLAYA TORTUGA NEGRA			
PM001	T4 100 (with pb)	01/12/06	T6 140, foraging
PM002	T3 End (with pb)	01/12/06	T5 210-end, T7-80, singing, T3 end display at nest
PM003	E22 (with pb)	04/12/06	T24, T27, T28, T36, singing
PM004	E22 (with pb)	04/12/06	E43 120 singing, E36 100 (nest)
PM005	E22 (with pb)	04/12/06	T6 140, foraging site
PM011	T4 100 (with pb)	09/12/06	T7 80 (singing)
PM015	T4 100 (with male)	10/01/07	T4 100 (nest)
PM016	T6 140 (with pb)	11/01/07	T6 140 (singing), T5/T6 (nest)
PM017	T6 140 (foraging)	13/01/06	All transect T8, T9 middle (singing)
PM018	T11 20 (with pb)	14/02/07	T11 50 (nest), T11 100
PM019	T6 140 (foraging)	19/02/07	T5 130 (display at nest)
PM020	T6 140 (foraging)	27/02/07	T3 50 (nest)
CALETA BLACK			
PRG 12003	E9 (with pb)	08/12/06	E9, E5
PM007	E9 (with pb)	08/12/06	C5 end (white band missing)
PM008	E9 (with pb)	08/12/06	C5 240 and direction E23
PM009	E9 (with pb)	08/12/06	E5

Table 3. Results of territory mapping at Playa Tortuga Negra and Caleta Black, December 2006-February 2007. Shown are territorial males (singing or at nest site) and sightings of females. Higher numbers of female sightings are associated with nesting activity.

	Playa Tortuga Negra		Caleta Black	
	Male	**Female**	**Male**	**Female**
December	24	4	-	-
January	21	6	9	5
February	22	15	14	10

Table 4. Number of territorial males counted with different techniques in February 2007.

	Playa Tortuga Negra	Caleta Black
Territory mapping, February	22	14
Point counts without playback	17	10
Point counts with playback	21	12

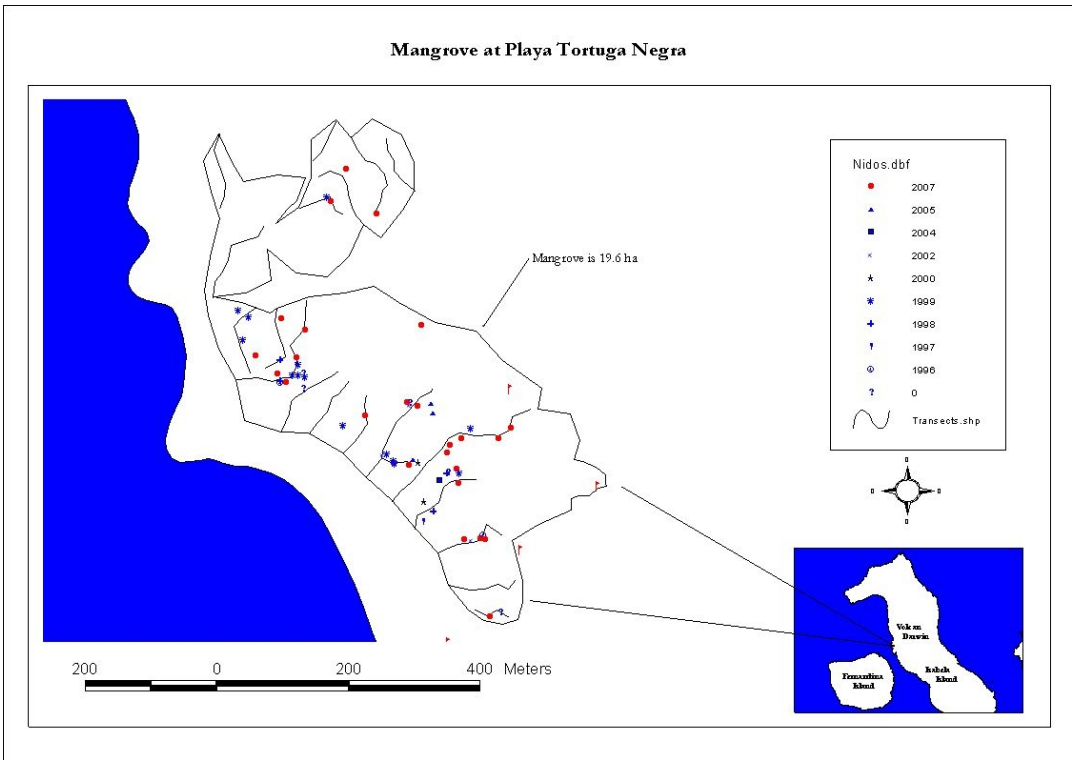


Fig 1. Current and historical Mangrove Finch territories at Playa Tortuga Negra

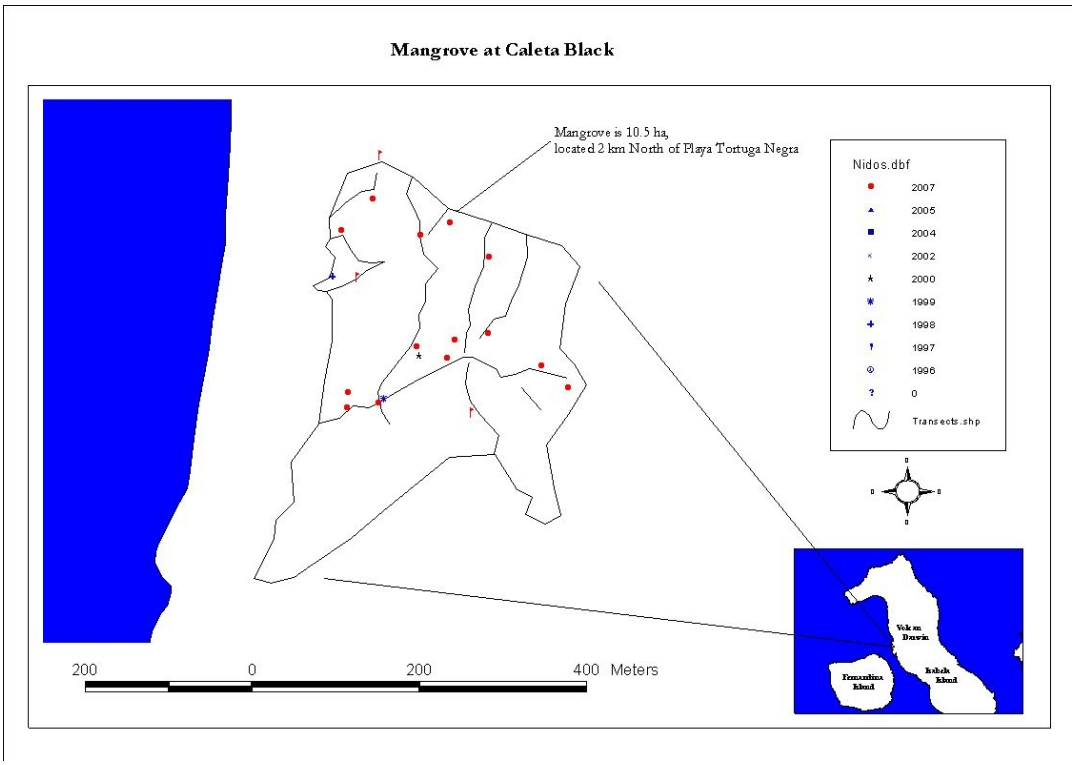


Fig 2. Current and historical Mangrove Finch territories at Caleta Black

INTRODUCED SPECIES

SMOOTH BILLED ANI

In December 4-6 birds were observed at PTN with one group at CB (approx. three birds). Altogether, 8 birds were shot 2006-2007. In March 2007 only one group of Ani (about 4 birds) were observed, at PTN. Thus, it seems, that colonisation from other areas is slow and control of this species straightforward.

CATS

In total three cats were killed by shooting, traps were also put up during the last trip (mandibular traps with urine as attractant). Once a cat entered but freed itself, another time the trap was activated but no catch was made.

WASPS: *Polistes versicolor*

There are only few wasps in this area (see reports before). During our final field trip seven traps were placed 10-15m inside the mangrove area, in mixed Scutia-mangrove vegetation. The idea was to see if wasps do enter the mangrove area and thus may be in competition with Mangrove Finch. Only four wasps were caught and it was concluded that population density of *Polistes* is low; their foraging area differs from the mangrove finch as they hardly enter the mangrove area and, thus, competition is considered to be low.

RATS

Rat poisoning

Intensive rat control was begun during the site visit of 26th March to 14th April. In total 30kg of Klerat cubes (0.05g Anticoagulant Brodifacoum / kg) were put out around the periphery and inside the breeding sites at Caleta Black and Playa Tortuga Negra as well as in a small mangrove patch between the two sites.

Methodology

- periphery: one cube (5g) of Klerat was put every 3 to 4 metres.
- Inside the mangroves: cubes were perforated and put on a piece of wire (4 per wire). The wires were fixed above the high tide line on trunks or branches along transects (approximately every 5 m). 188 wires were put out in Playa Tortuga Negra and 76 in Caleta Black. After three days transects were checked: 100% of the poison was eaten and 3 more cubes were put on the wires. After another three days (end of the visit), 90% of the poison had been eaten again. This procedure will be continued for the rest of the project and poison will also be put in adjacent vegetation.

Rat trapping

Rats were also trapped with Tomahawk traps at mangrove finch breeding sites.

Playa Tortuga Negra

Placement	Trapping success (%)	Date	Number of rats killed
Beach side	0	Dec 06	0
Lava side	27.5	Dec 06	11
Inside Mangle	13.3	Dec 06	4
Inside Mangle	38.5	Feb/March 07	47
Inside Mangle|	30	March 07	24
Inside Mangle	6.8%	March 07 after Klerat put out	4

Caleta Black

Placement	Trapping success (%)	Date	Number of rats killed
Beach side	13.3	Jan 07	4
Lava side	10	Jan 07	3
Inside Mangle	10	Feb/March 07	1
Beach and lava	38.8	Feb/March 07	7

All captured rats were black rats (*Rattus rattus*).

Checklist for submission

	Check
Is the report less than 5MB? If so, please email to Darwin-Projects@ectf-ed.org.uk putting the project number in the Subject line.	
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