

DARWIN INITIATIVE FOR THE SURVIVAL OF SPECIES



PROJECT ANNUAL REPORT

Project Title: Ecology and Conservation of the Endemic
St Helena Wirebird

Country: St Helena

Contractor: University of Reading

Project Reference Number: 162/07/115

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Start/Finishing Dates: 01/08/1998 – 31/07/2001

Reporting Period: 01/04/2000 – 31/03/2001

Project Background

The South Atlantic island of St Helena, a British Overseas Territory, is one of the most isolated land-masses in the world. It lies some 1900km west of Africa and 3300km east of South America. Although encompassing an area of only 122km² St Helena's extreme isolation has been a catalyst in the evolution of a remarkable diversity of endemic animals and plants. It is known that at least nine endemic bird species have occurred on St Helena. Six species were terrestrial and at least five of these survived into historical times.

At the time of its discovery in 1502 St Helena was heavily forested and had no indigenous population. Subsequent colonization resulted in environmental damage on a catastrophic scale. The native vegetation had been almost totally destroyed by the end of the 19th Century, leading to severe erosion and land degradation. This habitat disruption and the introduction of alien predators such as rats, cats, dogs, and pigs led to substantial loss of native biodiversity.

The St Helena wirebird *Charadrius sanctaehelenae*, a small plover, is the last surviving bird species endemic to St Helena and is listed as endangered by IUCN. The population numbered 400-450 individuals in the late 1980s, but had declined to 315 individuals by 1993. The ecology and demography of the species are poorly known, so there is little information on current threats to the population. This project aims to provide an up-to-date estimate of wirebird numbers and establish a standardized population monitoring programme to be carried out by local personnel. Other objectives include examination of habitat use and determination of habitat requirements and estimation of demographic parameters in order to investigate the impact of various factors on reproductive output and their implications for the species' long-term survival.

Project Objectives

The principal objectives of the project are:

- 1) to estimate the current size of the wirebird population and develop a standardised censusing methodology
- 2) to examine variation in the density of birds in different areas of the island in relation to habitat and land-use.
- 3) to estimate basic demographic statistics for the wirebird population in order to examine the impact of various factors such as habitat, predation and grazing practices on breeding success, and, possibly, the abundance of wirebirds in the long-term.
- 4) to train local conservation workers in census techniques with a view to establishing a long- term monitoring programme for the wirebird.

The above objectives have remained unchanged over the past year.

Progress

a) Progress to beginning of reporting period

The project commenced on 1st August 1998. A provisional plan for fieldwork on St Helena during 1998/99 was put together during August 1998. We also compiled all data on St Helena wirebirds collected during previous studies in 1988 and 1989 for comparison with data collected during the present study (August and September 1998). UK staff (Dr Neil McCulloch) arrived on St Helena on 1st October 1998. A final fieldwork plan was designed, discussed with our local collaborators and put into operation. Data collection in the field has concentrated on the censusing of wirebird numbers (October/November 1998 and February/March 1999). Major surveys of vegetation composition (December 1998-March 1999) and prey abundance (October 1998-March 1999) have also been carried out at major wirebird breeding sites. An ongoing programme of ringing of adult and immature wirebirds was initiated. Close liaison was established with the Environmental Conservation Section (ECS) of the St Helena Department of Agriculture and Natural Resources and a formal programme of training in bird monitoring techniques was initiated for two ECS staff members in December 1998. Regular reports on the progress of the project were disseminated through the St Helena media and project newsletters were distributed both in St Helena and the UK. The field season ended on 26th March 1998.

Data collected during the 1998-99 season were analysed between April and September 1999. The information obtained confirmed a decline of c20% in wirebird numbers since 1989. The relationship between wirebird density and a range of environmental factors was examined and a predictive model of wirebird density produced. This work has been written up and submitted for publication. A second season of field research was carried out between 7th October 1999 and 22nd March 2000. The seasonal wirebird census programme was continued. The principal aim of the field programme was to obtain data on wirebird breeding success. This involved intensive monitoring of nests and hatched broods and ringing of both chicks and adults. This study concentrated on the largest wirebird breeding population, at Deadwood Plain. Sampling of prey populations at grassland wirebird sites was also greatly extended. Close liaison with the Environmental Conservation Section (ECS) of the St Helena Department of Agriculture and Natural Resources and with the St Helena Government's Environmental Co-ordinator was maintained. Unfortunately it was not possible to continue the programme of training in bird monitoring techniques, initiated last year, for ECS personnel because of serious staff shortage. Links with the St Helena Education Department and the St Helena Nature Conservation group were strengthened and teaching aids and display materials produced. Regular reporting of project activities through the St Helena media and project newsletter continued.

b) Progress during reporting period

Analysis of data collected during the project's second field season was undertaken between April and September 2000. A paper discussing the relationship between the decline in Wirebird numbers and habitat change, submitted last year, was revised and accepted for

publication. A third season of field research was carried out between 16th October 2000 and 30th March 2001. The seasonal wirebird census programme was continued. The principal aim of the field programme was to obtain further data on wirebird breeding success. This involved intensive monitoring of nests and hatched broods and ringing of both chicks and adults. This study concentrated on the largest wirebird breeding population, at Deadwood Plain. Regular sampling of prey populations and monitoring of vegetation height and grazing pressure was also carried out at Deadwood Plain. Collaboration with the Environmental Conservation Section (ECS) of the St Helena Department of Agriculture and Natural Resources and with the St Helena Government's Environmental Co-ordinator was maintained. Recruitment of additional staff by ECS allowed the resumption of the programme of training in bird monitoring techniques, initiated in 1998. Information collected during this project and the baseline study in 1988-89 was collated into a computer database for use by ECS. This was deposited with the Conservation Officer in March 2001. Links with the St Helena Education Department and the St Helena Nature Conservation group were maintained and drafts of a field guide to the birds of St Helena and Ascension Island and for a tourist brochure on the wirebird were produced. Regular reports on the project were disseminated through the St Helena media and the project newsletter was distributed both in St Helena and the UK. A formal presentation on the work of the project and wirebird conservation in general was given to St Helena's Governor and Legislative Council. Close liaison was established with consultants appointed by the Department for International Development (UK) to assess the potential for air access to St Helena. This included a series of discussions on likely environmental impact of airport construction and site visits to proposed airport locations.

c) Training programme

Seven members of ECS staff participated in training in Wirebird monitoring techniques during the field season. These included the Conservation Officer and additional personnel selected by him on the basis of perceived ability, motivation and likelihood of being involved in such work in the future. The programme concentrated on practical aspects of monitoring. Discussion of theoretical considerations was kept to a minimum in view of the lack of any scientific background amongst the participants. Training took the form of weekly population monitoring at a large wirebird site in the south of the island. This had the advantage of providing parallel data to that being collected at the project's main site, Deadwood Plain as well as giving the participants valuable experienced. Trainees were initially accompanied during surveys and then gradually allowed to operate independently on sections of the site as their confidence and competence increased. Independent surveys were repeated by project staff to assess accuracy.

d) Difficulties

The only problems encountered in the course of the research programme have been associated with St Helena's unpredictable climatic conditions. The 2000-2001 breeding season began abnormally early. This resulted in much potential data on nesting success being lost before project staff arrived on the island. It had been our intention to trap a substantial number of adult wirebirds, both for ringing to estimate the proportion of birds nesting more than once during the season and to obtain feather samples for DNA analysis. Wirebirds can only be trapped efficiently while on the nest. This was severely restricted by unusually cold

weather during November and December, which prevented intensive trapping of incubating birds because of the risk of eggs becoming chilled.

ECS staff were fully committed to other projects during the first six weeks of the field season. It was therefore not possible to re-start the training programme until mid-November. Participating personnel were limited to only one day's training per week and sharing of transport with other sections within the Agriculture and Natural Resources Department occasionally led to vehicle shortages and consequent cancellation of training sessions.

e) Changes to project design

The project design remains unchanged.

f) Timetable for next reporting period

The project will end on 31st July 2001. From 1st April field data obtained during the final season will be analyzed and final reports to the sponsors and the St Helena Government will be produced. The latter will include recommendations for a long-term management strategy for the wirebird. It is hoped that a number of scientific papers will also be written.

Partnerships

The project's principal partner on St Helena is the Environmental Conservation Section of the Agriculture and Natural Resources Department. Our other major point of contact with Government is the Environmental Co-ordinator, who has essentially an advisory role on the impact of Government policy on the island's environment. Although the post of Environmental Co-ordinator is based in the Office of the Government Chief Secretary it is effectively part of ECS. Collaboration with ECS has centered on the training of local staff in wirebird census techniques and nest monitoring with a view to setting up a long-term monitoring programme for the species. Project staff are also regularly consulted on matters relating to bird conservation in general by the Conservation Officer. At the request of the Environmental Co-ordinator, impact assessments for major development projects, i.e. erection of wind turbine generators on Deadwood Plain and the proposed construction of an airport.

The project also works closely with the St Helena Nature Conservation Group (SNCG), the island's only environmental NGO. Collaboration with SNCG has mainly been associated with raising public awareness of conservation issues affecting both the wirebird and St Helena's other bird species. This has involved field talks on the wirebird and other species given during guided natural history walks, production of display material and the drafting of a field guide to the birds of St Helena and Ascension Island and an information brochure on the wirebird for visitors to St Helena. Updates on project progress were also given at the Group's monthly meetings.

A series of bird information cards, covering all species regularly occurring on St Helena, has been produced in collaboration with staff of the St Helena Education Department for use as a

teaching aid. Other collaborative work with the Education Department has included visits to the primary school in the most important wirebird area.

The project has also been involved at the planning stage in the Millennium Gumwood Forest Project. This aims to re-establish a substantial area of the threatened St Helena Gumwood *Commidendrum robustum* in a degraded area of the island by public participation planting. Input from the wirebird project has been in the form of advice on layout and selection of plant species for establishment on the forest's periphery that would provide the greatest benefit to the area's wirebird population.

The project has been instrumental in establishing more regular contact between the Environmental Co-ordinator and, to a lesser degree, ECS and the international department of the Royal Society for the Protection of Birds (UK). The latter are able to provide advice on a wide range of conservation matters, including funding.

Impact and Sustainability

The project maintains a relatively high profile on St Helena through regular newsletters, radio broadcasts, newspaper articles and talks. Project staff have become well known throughout the island. It is clear from direct feedback from the public and politicians and high levels of interest shown in display materials that awareness of the unique status of the wirebird and of the difficulties it faces have been significantly raised during the period of the project.

The island's capacity to provide adequate conservation management for the wirebird has been enhanced by the provision of training in monitoring techniques to nine ECS staff members during the past three years. ECS staff involved with the wirebird now also have a greater understanding of the species' biology and habitat requirements. This is reinforced by their possession of a computer database of all wirebird information collected since 1988.

The project's final report should contain all the basic information to enable a long-term conservation strategy for the wirebird to be established and project staff are committed to a future advisory role, as and when required. The five staff members at ECS who have received the most extensive training are all capable of passing on their knowledge of monitoring techniques to future recruits. Printed guidelines for census work have also been provided.

Outputs

Table 1.

Ref. No.	Quantity	Description
6 A	7	Environmental Conservation Section (ECS) staff received training in wirebird monitoring techniques.
6 B	17	Weeks of training given.
8	26	Dr Neil McCulloch carried out field studies on St Helena for 25 weeks, from 16 th October 2000 to 30 th March 2001. Dr Ken Norris visited St Helena from 4 th – 12 th January 2001.
10	1	A draft of a field gude to the birds of St Helena and Ascension Island was produced.
11B	1	A paper on the relationship between the decline in wirebird numbers and habitat change was accepted for publication by the Journal of Applied Ecology.
12 A	1	A computer database containing all information pertaining to the wirebird collected during this study and that of 1988-89 was collated and handed over to ECS.
14 A	3	Three talks on the wirebird were given in St Helena.
14 C	4	A presentation on the work of the project was given to the Legislative Council of St Helena in March 2001. Four reports on the progress of the project were delivered at meetings of the St Helena Nature Conservation Group.
15 A	2	The St Helena News carried press releases from the project in October 2000 and April 2001.
16 A	1	A project newsletter was distributed both on St Helena and in the UK.
16 B	30	Copies of newsletter distributed in UK.
16 C	30	Copies of newsletter distributed in UK.
19 A	3	Dr Neil McCulloch (December 2000 & March 2001) and Dr Ken Norris (January 2001) were interviewed about project activities on Radio St Helena.

Fluctuating staff levels and changes to ECS management in both personnel and structure have resulted in the staff training programme (Refs. 6 A, 6 B) having to be carried out as and when personnel and resources were available, rather than under the formal structure envisaged at the project planning stage.

The project was not featured in the UK media (Refs. 15 C, 18 B, 19 B) during the past year as analysis of current research topics was incomplete.

No television coverage of the project was possible on St Helena (Ref. 18 A) as local production of programmes has yet to begin.

Table 2: Publications

Item	Detail	Publishers	Available From	Cost
Journal	Localized habitat change and population decline in the endangered St Helena plover.	Journal of Applied Ecology	in press	n/a

A dissemination network has been established on St Helena that includes relevant Government departments and individuals, NGOs and public access points such as the Public Library and Archives. These will receive all future publications derived from the project.

Expenditure

Table 3

Item	Budget	Expenditure
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Monitoring and Evaluation

During the past year the research element of the project has been focused on the monitoring of wirebird population size and the estimation of demographic parameters. Data collection in both aspects follows well established field protocols. Success in the former is determined is evaluated by the levels of variation in counts of birds on a site-by-site basis. Population estimates are regarded as valid if counts show consistency (within reasonable limits of variation based on our knowledge of the species biology) between censuses. This has been achieved to date. The level of success attained in estimating demographic statistics is largely determined by the amount of data obtained. The targets for data collection during the past year were: record histories of at least 30% of wirebird nests at the selected study site; mark at least 50 wirebird chicks with individual combinations of colour-rings; similarly mark at least 30 breeding adult wirebirds. The first two targets were achieved but adverse weather conditions prevented attainment of the third.

The results of the training programme were assessed by monitoring the performance of trainees in the field. After several weeks of instruction in census techniques and accompanied surveys, trainees carried out census work independently and their results were compared with those of follow-up surveys by project staff. All staff regularly involved in the programme performed to a satisfactory standard.

The ultimate aim of the project is to draw up a long-term conservation management strategy for the St Helena wirebird and to establish a locally staffed population monitoring programme. The past year's outputs, in the form of data collected, contribute directly to the better understanding of the wirebird's ecology and demography, which are essential to the production of an effective management plan. Dissemination of information through various media within St Helena has effectively raised the awareness amongst the public and decision-makers of the need for action to conserve the wirebird. Wider publication brings the species to the attention of a range of organisations that may have future contributions to make to wirebird conservation. The project's training programme provides local conservation workers with the skills to monitor the status of the wirebird population and the effectiveness of any future conservation management. These skills should now be transferable and thus reduce the need for overseas input.

Authors

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Date

31/04/2001