Ecology and conservation of the endemic St Helena wirebird

Project 162/7/115

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Darwin Initiative for the Survival of Species

Final Report

1. Darwin Project Information

Project title	Ecology and conservation of the endemic St Helena wirebird
Country	St Helena
Contractor	University of Reading
Project Reference No.	162/7/115
Grant Value	£88,968
Staring/Finishing dates	1/8/98 to 31/7/01

2. Project Background/Rationale

- Describe the location and circumstances of the project

  The project was undertaken on the island of St Helena, a UK Overseas Territory in the South Atlantic. Since colonisation by Europeans, St Helena has experienced widespread loss and degradation of its natural habitats, and concomitant loss of unique biodiversity. With respect to avian biodiversity, the almost complete loss of native forest resulted in the extinction of a number of endemic species. The only remaining endemic birds species, the St Helena plover/wirebird (*Charadrius sanctaehelenae*), ironically probably benefited from the forest clearance as it is a species of open, semi-arid grassland habitats, and large areas of former forest on St Helena were converted to livestock pastures, which are ideal habitat for wirebirds.

- What was the problem that the project aimed to address?

  At the end of the 1980s a detailed ecological research project examined the ecology and conservation of the wirebird population for the first time (this work was undertaken by Dr Neil McCulloch, who also carried out the fieldwork under the Darwin project). The 1980s work highlighted the importance of livestock pastures for the wirebird population, assessed current threats to the population, and concluded that there was no obvious evidence of a serious conservation problem (i.e. abundance declines) at that time. However, subsequently censuses conducted by the Environmental Conservation Section (ECS) of the St Helena in the early 1990s suggested a population decline of about 25%. Therefore, the main problem being addressed by our Darwin project was to understand whether the population was declining, to identify its cause, and design management actions that could benefit wirebirds in the longer-term.

- Who identified the need for this project and what evidence is there for a demand for this work and a commitment from the local partner?

  The need for the project initially was identified by Dr McCulloch and myself, although ECS also recognises its conservation obligations and the importance of

the wirebird population. Having identified a potential need for the ecological work, we immediately liased extensively with ECS staff, particularly Dr Rebecca Cairns-Wicks, to develop a project that would tackle the important scientific issues as we see them, and that would also provide practical input that would have lasting value in St Helena. The demand for the work was well recognised by everyone involved, since a declining endemic species is obviously a conservation priority, both locally and globally. The commitment from the local partner, ECS, has always been 100%. ECS do an incredible amount of practical conservation work using limited resources. Both they, and the islanders, widely recognise the conservation value of the wirebird population, and the bird is also a very popular local environmental symbol. ECS have actively supported the project, made arrangements for the project work to feed into local governmental and non-governmental conservation mechanisms, and made staff and resources (e.g. transport) available to the project. They have also used the project to generate local interest in wirebird conservation issues.

3. Project Summary

- What were the purpose and objectives (or purpose and outputs) of the project? Please include the Logical Framework for this project (as an appendix) if this formed part of the original proposal or has been developed since, and report against this.

No Logical Framework was developed for the project. The project initially had five primary objectives:

- *Undertake research and monitoring work.* This work was designed to determine the current status of the population (is it still declining?) and identify current threats to its persistence. This work involved three specific tasks: (1) estimating current population size and developing a standardised censusing methodology to be used in all future censuses, (2) examining habitat use to determine habitat requirements, and (3) estimating basic demographic statistics.
- *Develop database.* This work was designed to produce a properly documented electronic database holding all the available wirebird data, and which could be added to in the future.
- *Training.* This was designed to provide ECS staff with the field skills to undertake basic ecological monitoring work.
- *Management plan.* This was simply a vehicle to bring together the research findings in a way that made it relatively simply to design practical action.
- *Raise awareness of conservation issues related to wirebirds.*

- Were the original objectives or operational plan modified during the project period? If significant changes were made, when was approval given by the Darwin Secretariat?

None of the original objective were altered significantly during the course of the project. Minor changes have occurred. These relate to specific objectives:

Database – this has been developed using a series of standardised Microsoft Excel files rather than using a relational database like Access primarily because this was easier to set up because the ecological data were clearly compartmentalised rather than relational.

Training – we originally planned to train ECS staff in the use of the database and ecological models generated by the project. This is not necessary with the Excel system because separate files contain very specific data, the format of which can then easily be used as a template for future data recording. The database has only recently been completed, so has not, as yet, been made fully available to ECS. With respect to the ecological models, the project team are remaining involved in wirebird conservation in an advisory capacity, so it is logistically easier for us to undertake data analysis on ECS's behalf.

- Which of the Articles under the Convention on Biological Diversity (CBD) best describes the project? Summaries of the most relevant Articles to Darwin Projects are presented in Appendix I.

The project was designed to assist with obligations under the Biodiversity Convention by (1) research and monitoring to determine the current status of the wirebird population and assess current threats to its persistence (Article 7); (2) use the results of research work to produce a management plan for this species (Article 6); (3) provide training to key staff within ECS concerning the collection, storage and analysis of important ecological data (Article 12); and (4) use the management plan as a framework to institute in-situ conservation action on St Helena (Article 8), and raise the profile of wirebird conservation issues at various levels using public education (e.g. talks and field trips involving local schools, articles in the popular science press) and an awareness campaign directed towards conservation groups (e.g. RSPB, Birdlife International, UK Dependencies Forum) and governmental agencies with an interest in nature conservation in the UK Dependencies (Article 13).

- Briefly discuss how successful the project was in terms of meeting objectives. What objectives were not achieved, or only partly achieved, and have there been significant additional accomplishments?

The completion of work towards each objective is described below, and the numbering refers directly to the above objectives.

- The research and monitoring objective was completed in full. Briefly, we successfully censused the population over three field seasons, developed and applied a standardised censusing methodology, collected extensive habitat data, and undertook detailed studies on breeding ecology.
- A fully documented database has been developed in Microsoft Excel. This includes all of the data collected during the Darwin project, but also all of the data

collected during the original ecological work done in the 1980s. As such, it is a comprehensive electronic copy of all ecological data currently available on wirebirds.

- Training was also completed successfully, with minor changes to our objective (see above for details). Training was difficult due mainly to staff turnover, although during the final year of the project we did manage to undertake training in field methods that involved a range of ECS staff. This was intentionally done with the aim of maintaining a skills base in ECS even though staff turnover might be high.
- A management plan is currently in draft form, awaiting the addition of some research results. It will then be circulated for consultation before it is (hopefully) adopted by ECS.
- This objective has been extremely successful, particularly locally on St Helena. Dr McCulloch has regularly featured on local radio during his time on the island, and has presented the research findings to the island's legislature.

4. Scientific, Training, and Technical Assessment

- Please provide a full account of the project's research, training, and/or technical work.
- **Research** - this should include details of staff, methodology, findings and the extent to which research findings have been subject to peer review.

  The Darwin grant employed a post-doctoral research assistant, Dr Neil McCulloch, who spent 7 months each year during the project undertaking fieldwork on St Helena, before returning to Reading to process, analyse and report on research findings.

  The ecological methods and findings are reported in detail in the accompanying report and management plan that will be used to guide future work on wirebirds. Here these details are summarised.

  Census data – we applied censusing methods for recording wirebird abundance that had been developed at the end of the 1980s. We also trialled a transect based method using distance sampling. This later method was tested because we wanted to see whether a smaller-scale censusing technique (i.e. that's easier for people to use) might be more appropriate. However, we found that this was inadequate mainly because adequately accounting for detectability with distance proved impossible. All census data were, therefore, collected using the complete method developed prior to our Darwin project.

  Our census data confirmed that the population had declined. It also showed that this decline was not uniform across major habitat types. The decline was most pronounced in pastures management for livestock grazing, rather than in natural semi-desert grasslands.

  Habitat data – during the original project work in the late 1980s an extensive database of habitat variables had been collected form all sites containing wirebirds on St Helena. We repeated the habitat census during the Darwin project. This meant we had a very detailed data set on changes in wirebird abundance that could

be related to habitat. We focused our analysis on the livestock pastures because this is where the population seemed to have declined most dramatically. Our analysis of habitat data showed that the decline in abundance occurred primarily at three pasture sites, and was associated with habitat changes that would have reduced the suitability of the grassland habitat for wirebirds. This work has now been published in the *Journal of Applied Ecology* (pdf file of the paper accompanies this report).

Demographic data – during the 2nd and 3rd field seasons we also undertook detailed studies on the breeding ecology of wirebirds in the most important pasture site, Deadwood Plain. The aim of this work was to examine the impact of grazing on the survival of wirebird nests and chicks, particularly testing the hypothesis that grazing reduced breeding success due to the trampling of nests by livestock. The fieldwork involved locating nests and determining their fates, finding chicks that had hatched, colour-ringing them, and then relocating them periodically to determine their survival rates. These studies showed that despite being exposed to high densities of livestock, wirebird nests were rarely trampled. Infact, there was evidence from 1 year that the survival of wirebird nests was actually higher in paddocks on the Plain that had a high density of grazing livestock. This appeared to be due to interactions between grazing and habitat. This suggests that grazing could be beneficial to breeding success. There was no evidence that chick survival rates varied in relation to livestock densities, but there is a strong seasonal effect on chick survival – chicks hatching early in the dry season have significantly higher survival rates than those hatching late. We also intend to publish this work in the *Journal of Applied Ecology*, although it has not, as yet been peer reviewed.

- **Training and capacity building activities** – this should include information on selection criteria, content, assessment and accreditation.

  Our original training component of the project was planned for two areas. Firstly, we wanted to train ECS staff in the field skills necessary to undertake basic monitoring of the wirebird population (abundance, nest success). This was because our longer-term plans were for ECS staff to take over monitoring work after the completion of the Darwin project. In the 1st field season, we targeted training to particular individuals within ECS because we planned to develop detailed skills in a few (1 or 2) key staff. The people chosen for training were those with some basic relevant skills, and who would be in a position to utilize their training in the longer-term. This worked well. However, ECS experiences high levels of staff turnover, and the people involved left ECS during the 2nd field season. This meant that we re-designed our training by the 3rd field season to accommodate the turnover problem. As a result, we provided more basic general training to 3 or 4 staff in the hope that there would always be some basic skills resident in ECS that could be used to train new staff, even if staff turnover remained high. During the 3rd field season, training took the form of training days at one of the pasture sites, during which ECS staff were given practical tuition in censusing methods, nest finding, and nest data recording (e.g. measuring eggs). Assessment was not formal, but included practical session in which ECS staff would undertake the censusing activities themselves while Dr McCulloch was present to provide guidance where necessary. The emphasis was very much to encourage and enable ECS staff to take responsibility for data collection themselves.

5. Project Impacts

- What evidence is there that project achievements has led to the accomplishment of the project purpose? Has achievement of objectives/outputs resulted in other, unexpected impacts?

  Given that the purpose of the project was to determine the current status of the wirebird population and assess threats it was facing, then the project achievements have clearly accomplished the project purpose. The evidence for this is the extensive data maintained in the data based, and a thorough analysis of the data, some of which has already been published, and so has been subjected to peer review.

- To what extent has the project achieved its goal, i.e. how has it helped the host country to meet its obligations under the Biodiversity Convention (CBD), or what indication is there that it is likely to do so in the future? Information should be provided on plans, actions or policies by the host institution and government resulting directly from the project that building on new skills and research findings.

  The project has helped the St Helena Government in the sense that it now has some firm scientific grounding for developing conservation action. The research work has been presented to the government by Dr McCulloch, and has also been widely discussed within ECS, and with NGO groups on the island. There is also a draft management plan setting out clear management actions derived from the research. It is too early to say how these recommendations will be acted upon, but the research work and management plan provide the potential for relevant, targeted management actions to be put in place. Essentially, the role of the Darwin project has always been to put the groundwork in place to allow further development of conservation initiatives. This is an area we intend to stay actively involved in, and together with ECS and other governmental staff (e.g. Rebecca Cairns-Wicks), we will use the research to promote actions and policies.

- Please complete the table in Appendix I to show the contribution made by different components of the project to the measures for biodiversity conservation defined in the CBD Articles.

  Done.

- If there were training or capacity building elements to the project, to what extent has this improved local capacity to further biodiversity work in the host country and what is the evidence for this? Where possible, please provide information on what each student / trainee is now doing (or what they expect to be doing in the longer term).

  The capacity building within the project has revolved around improving the skills base within ECS to undertake basic monitoring work themselves, using standard and repeatable methods. The evidence for this is the presence of ECS staff who now have some basic monitoring skills. On completion of the project, there were 4 ECS staff who had been involved in the training programme during the 3rd field

season, who continued to work for ECS, and who planned to continue monitoring the Deadwood Plain population following completion of the Darwin project.

- Discuss the impact of the project in terms of collaboration to date between UK and local partner. What impact has the project made on local collaboration such as improved links between Governmental and civil society groups?

  The collaborative links have had excellent impact, especially locally on St Helena. The presence of UK fieldworkers has been used by government conservation staff to generate interest in conservation work involving wirebirds, and as a means of directly feeding research results into government officials. This has been done using a range of media, including talks and practical involvement from schools, radio broadcasts, site visits, face-to-face meetings. The challenge for the project post-Darwin is to maintain these links.

- In terms of social impact, who has benefited from the project? Has the project had (or is likely to result in) an unexpected positive or negative impact on individuals or local communities? What are the indicators for this and how were they measured?

  This is an extremely difficult issue to quantify. The St Helena wirebird is held in great regard by the islanders. It is something of a national symbol, and also an important flagship species for the biodiversity of St Helena. Judging by the extremely positive response from islanders to our project work, I would say that the very fact that overseas researchers were working hard together with local people on this problem had social impacts in the sense that it made the islanders feel that their island and its resources were valued outside St Helena. It is hard to under-estimate how important this is to isolated island communities. It is also virtually impossible to quantify. More tangibly, the work may well, in the longer-term, have implications for livestock grazing practices. It is difficult to judge the positive and negative effects of this other than to say that there seems little evidence, if any, to support the view that livestock grazing and wirebird conservation are incompatible. In fact the opposite is true.

6. Project Outputs

- Quantify all project outputs in the table in Appendix II using the coding and format of the Darwin Initiative Standard Output Measures.

  Done.

- Explain differences in actual outputs against those in the agreed schedule, i.e. what outputs were not achieved or only partly achieved? Were additional outputs achieved? Give details in the table in Appendix II.

  Done.

- Provide full details in Appendix III of all publications and material that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Details will be recorded on the Darwin Monitoring Website Publications database which is currently being compiled.

  The only publication from the project so far that is available in the public arena is the *Journal of Applied Ecology* paper. A fact sheet on wirebirds was produced in

collaboration with the St Helena Education Department, as part of a series covering birds on St Helena, but this is only available on the island. Dr McCulloch has also written a field guide to the birds of St Helena, which will be publicly available when published.

- How has information relating to project outputs and outcomes been disseminated? Will this continue or develop after project completion and, if so, who will be responsible and bear the cost of further information dissemination?

  With the exception of the *Journal of Applied Ecology* paper, dissemination of the project's results have been more direct. We have compiled and circulated a regular newsletter updating project progress that has been made available to islanders and people in the UK with an interest in conservation (e.g. UK Overseas Territories Forum). Dr McCulloch, and myself to a lesser extent, have been involved in meetings on the island in which research results have been presented and their implications discussed. Prior to leaving St Helena earlier this year Dr McCulloch presented the project's findings to the island legislature. Regular radio interview on the island have also provided a valuable vehicle for dissemination.

  Now the project has been completed, ECS staff and Rebecca Cairns-Wicks will have a role in disseminating research results locally. Our role will now be as scientific consultants. This has negligible cost, other than if a site visit needs to be made from the UK. Resources would need to be sought to cover this as and when it became necessary.

7. Project Expenditure

Expenditure items	1998/99	1999/00	2000/01	2001/02

8. Project Operation and Partnerships:

- How many local partners worked on project activities and now does this differ to initial plans for partnerships? Who were the main partners and the most active partners, and what is their role in biodiversity issues? How were partners involved in project planning and implementation? Were plans modified significantly in response to local consultation?

  There was only a single local partner involved in the project – ECS. They are the government conservation agency on St Helena, with wide ranging responsibilities for the conservation of the island's biodiversity. Individuals within the government, particularly Rebecca Cairns-Wicks, were involved at the project planning stage,

prior to our application to Darwin for funding. Plans were not modified as we all agreed what needed to be done.

- During the project lifetime, what collaboration existed with similar projects elsewhere in the host country? Was there consultation with the host country Biodiversity Strategy (BS) Office?

  ECS are the local BS office, so yes, there was consultation. Over the lifespan of our project there were few comparable projects running. We made our vegetation data available to a studentship project, also based at Reading, which was researching restoring the vegetation of the Crown Wastes on St Helena. Our work also collaborated with conservation initiatives run by other government departments (e.g. Education Department). Finally, we all planted trees as part of the Millenium Forest Project, aimed at restoring native forest.

- How many international partners participated in project activities? Provide names of main international partners.

  The University of Reading.

- To your knowledge, have the local partnerships been active after the end of the Darwin Project and what is the level of their participation with the local biodiversity strategy process and other local Government activities? Is more community participation needed and is there a role for the private sector?

  There were no local partnerships directly involved in our project.

9. Monitoring and Evaluation, Lesson learning

- Please explain your strategy for monitoring and evaluation (M&E) and give an outline of results. How does this **demonstrate** the value of the project? e.g. what baseline information was collected (e.g. scientific, social, economic), milestones in the project design, and indicators to identify your achievements (at purpose and goal level).

  Our monitoring and evaluation strategy was simple. We developed criteria for assessing the degree to which we had achieved our main objectives. These were outlined in our original proposal (section 3). The criteria were: (1) successful completion of planned fieldwork; (2) completion of fully functional database; (3) trained ECS staff with a working knowledge and ability to collect, store and analyse the required ecological data; (4) completion of the management plan; and (5) an agreed strategy and timetable for the management plan's implementation. It is reasonably obvious how these demonstrate value in the sense that each criteria produces tangible results that contribute to our objectives and overall project purpose. The only criteria that has not been satisfied is (5) because the management plan is currently in draft, and will require consultation before implementation plans are put in place. However, this is something that will be taken forward outside the Darwin project by the project's participants.

- During the project period, has there been an internal or external evaluation of the work or are there any plans for this?

No, other than peer-review of the science that has been published.

- What are the key lessons to be drawn from the experience of this project? We would welcome your comments on any broader lessons for Darwin Initiative as a programme or practical lessons that could be valuable to other projects, as we would like to present this information on a website page.

  I think this project highlights the strengths and weaknesses of the Initiative. Its strengths lie in its focus on producing valuable high quality science that is undertaken with extensive local input, and that will be valuable in its own right in terms of practical conservation. I also think that it is superb to encourage researchers to participate in training, education and awareness initiatives. Ecologists involved in conservation work need to do more of this. All of these aspects were very successful within the St Helena project. We undoubtedly filled an information void with useful data, and contributed to training, education and awareness initiatives.

  The weakness of the Initiative is, in my view, the result of it being a fixed-term project based grant system. This makes it difficult to maintain longer-term links and work. True, the Initiative provides many things that could have lasting benefits to biodiversity conservation, but it is poor in the sense that there are no obvious links to longer-term resources that could support the people and partnerships developed during the project. I am certainly not advocating that the Initiative be radically changed – I think it does a great job at promoting project-based biodiversity research. However, I do think greater emphasis needs to be made to assist project partners maintaining long-term support for their work by, for example, facilitating contacts with other funding bodies. Also, it might be worth considering parallel funding streams that might support individuals such as fellowship or internship schemes run with the same philosophy as the Initiative.

10. Darwin Identity:

- What effort has the project made to publicise the Darwin Initiative, e.g. where did the project use the 'Darwin Initiative' logo, promote Darwin funding opportunities or projects? Was there evidence that Darwin Fellows or Darwin Scholars/Students used these titles?

  The project was publicised throughout as a Darwin project. Efforts to publicise this were both strategic and opportunistic. For example, the newsletters carried the Darwin logo. The Initiative was discussed in radio interviews – in one interview I gave on local radio I went into some detail about what the Initiative was trying to do.

- What is the understanding of Darwin Identity in the host country? Who, within the host country, is likely to be familiar with the Darwin Initiative and what evidence is there to show that people are aware of this project and the aims of the Darwin Initiative?

Government conservation staff certainly knew about the Darwin Initiative and what it is trying to achieve. St Helena is a very small island, so most local people were well aware of our research work, and those that took an active interest knew who supported it.

- Considering the project in the context of biodiversity conservation in the host country, did it form part of a larger programme that dwarfed Darwin funding or was it recognised as a distinct project with a clear identity?

  The wirebird project was distinct and had a clear identity.

11. Leverage

- During the lifetime of the project, what additional funds were attracted to biodiversity work associated with the project, including additional investment by partners?

  The project was not really used in this way. We established what resources we needed at the start, and then put these together. These are detailed in our original application. We did seek commercial sponsorship at the initial stages of project planning, but we were unsuccessful mainly because there are limited opportunities for this.

- What efforts were made by UK project staff to strengthen the capacity of partners to secure further funds for similar work in the host country and were attempts made to capture funds from international donors?

  None - this was not really relevant within the context of the project.

12. Sustainability and Legacy

- What project achievements are most likely to endure? What will happen to project staff and resources after the project ends? Are partners likely to keep in touch?

  Clearly the immediate data outputs from the project will endure. ECS staff involved in training will hopefully remain within ECS and continue their involvement in conservation work. Even if staff turnover remains high, we have planned to maintain a basic skills base within ECS that should persist. Our longer-term plans are for the UK project staff, particularly myself, to remain in collaboration with ECS staff as science consultants. This would involve providing data analysis and interpretation input into wirebird conservation, using predominantly data collected by ECS, but also ecological tools developed by us during the project. This partnership will also contribute to management planning for wirebirds in the longer-term i.e. building on the Darwin project.

- Have the project's conclusions and outputs been widely applied? How could legacy have been improved?

  Not yet. This is because the management plan is still in draft. As I stated above, access to research findings has been quite widespread to date due to various dissemination mechanisms, but there is no strategy for applying the research yet. This is something our partnership needs to address as a priority matter once the management plan is in place.

- Are additional funds being sought to continue aspects of the project (funds from where and for which aspects)?

  Our original plan was for this aspect of longer-term project support to be guided by the management plan. Our aim is to turn the document into a costed plan for wirebird conservation.

13. Value for money

- Considering the costs and benefits of the project, how do you rate the project in terms of value for money and what evidence do you have to support these conclusions?

  This is a very tough question to answer objectively. If we hadn't done the research and wirebirds had become extinct, and if this wouldn't have happened had the project been done, then one could argue that it is exceedingly good value for money. However, making such a judgement is pretty difficult. What our project did well, in my view, is to have provided some very valuable practical data and techniques that will provide the basic tools for wirebird conservation in the long-term. The project had many valuable spins offs too in terms of training, education and awareness initiatives. The project has to date been less effective at putting longer-term plans in place and sorting out how these will be implemented. This mainly reflects the role the project has played in doing the basic research needed to make longer-term plans. In financial terms, the project was not expensive in comparison with other Darwin grants, and it addressed a number of different biodiversity obligations that would otherwise not have been done. In this respect I do feel that it has been good value for money.

Author(s) / Date

Dr Ken Norris.
2nd November, 2001.

14. Appendix I: Project Contribution to Articles under the Convention on Biological Diversity (CBD)

Please complete the table below to show the extent of project contribution to the different measures for biodiversity conservation defined in the CBD Articles. This will enable us to tie Darwin projects more directly into CBD areas and to see if the underlying objective of the Darwin Initiative has been met. We have focused on CBD Articles that are most relevant to biodiversity conservation initiatives by small projects in developing countries. However, certain Articles have been omitted where they apply across the board. Where there is overlap between measures described by two different Articles, allocate the % to the most appropriate one.

Project Contribution to Articles under the Convention on Biological Diversity		
Article No./Title	**Project %**	**Article Description**
6. General Measures for Conservation & Sustainable Use	10	Develop national strategies which integrate conservation and sustainable use.
7. Identification and Monitoring	60	Identify and monitor components of biological diversity, particularly those requiring urgent conservation; identify processes and activities which have adverse effects; maintain and organise relevant data.
8. In-situ Conservation	5	Establish systems of protected areas with guidelines for selection and management; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; restore degraded ecosystems and recovery of threatened species; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; protect traditional lifestyles and knowledge on biological resources.
9. Ex-situ Conservation		Adopt ex-situ measures to conserve and research components of biological diversity, preferably in country of origin; facilitate recovery of threatened species; regulate and manage collection of biological resources.
10. Sustainable Use of Components of Biological Diversity		Integrate conservation and sustainable use in national decisions; protect sustainable customary uses; support local populations to implement remedial actions; encourage co-operation between governments and the private sector.
11. Incentive Measures		Establish economically and socially sound incentives to conserve and promote sustainable use of biological diversity.

12. Research and Training	10	Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations).
13. Public Education and Awareness	15	Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media; cooperate with other states and organisations in developing awareness programmes.
14. Impact Assessment and Minimizing Adverse Impacts		Introduce EIAs of appropriate projects and allow public participation; take into account environmental consequences of policies; exchange information on impacts beyond State boundaries and work to reduce hazards; promote emergency responses to hazards; examine mechanisms for re-dress of international damage.
15. Access to Genetic Resources		Whilst governments control access to their genetic resources they should also facilitate access of environmentally sound uses on mutually agreed terms; scientific research based on a country's genetic resources should ensure sharing in a fair and equitable way of results and benefits.
16. Access to and Transfer of Technology		Countries shall ensure access to technologies relevant to conservation and sustainable use of biodiversity under fair and most favourable terms to the source countries (subject to patents and intellectual property rights) and ensure the private sector facilitates such assess and joint development of technologies.
17. Exchange of Information		Countries shall facilitate information exchange and repatriation including technical scientific and socio-economic research, information on training and surveying programmes and local knowledge
19. Bio-safety Protocol		Countries shall take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities and to ensure all practicable measures to promote and advance priority access on a fair and equitable basis, especially where they provide the genetic resources for such research.
Total %	**100%**	**Check % = total 100**

15. Appendix II Outputs

Please quantify and briefly describe all project outputs using the coding and format of the Darwin Initiative Standard Output Measures.

Code	Total to date (reduce box)	Detail (←expand box)
Training Outputs		
1b	Number of PhD qualifications obtained	
2b	Number of Masters qualifications	
3b	Number of other qualifications obtained	
4a	Number of undergraduate students receiving training	
4b	Number of person weeks of training provided to undergraduate students	
4c	Number of postgraduate students receiving training (not 1-3 above)	
4d	Number of person weeks of training for postgraduate students	
5	Number of people receiving other forms of **long-term** (>1yr) training not leading to formal qualification(i.e not categories 1-4 above)	
6a	Number of people receiving other forms of **short-term** education/training (i.e not categories 1-5 above)	Up to 5 different ECS staff have received field training during the lifetime of the project, although only 3 remained with ECS at the end of the project.
6b	Number of person weeks of training not leading to formal qualification	During the 2000/01 field season there were about 10 person weeks spent in field training i.e. involving staff still at ECS.
7	Number of types of training materials produced for use by host country(s)	
Research Outputs		
8	Number of weeks spent by UK project staff on project work in host country(s)	90 weeks. This primarily involved Dr McCulloch (post-doc employed under the grant) who spent 6-7 months on St Helena each year (Sept/Oct to Mar/Apr). I also visited the island for 1 week during January 2001.
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	1. We have produced a draft management plan containing the main research findings and broad actions that are derived from these.
10	Number of formal documents produced to assist work related to species identification, classification and recording.	We originally planned to produce a distinct field methods manual but the methods have been incorporated within the report of our research results within the management plan.

Code	Total to date (reduce box)	Detail (←expand box)
11a	Number of papers published or accepted for publication in peer reviewed journals	1 (*Journal of Applied Ecology*). Plus another 4 in preparation.
11b	Number of papers published or accepted for publication elsewhere	None. When we drafted the original proposal we envisaged popular science articles as an important means of raising awareness of the conservation issues. However, this has been more effectively accomplished using alternative media e.g. local radio.
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	1. We have established an electronic database in Microsoft Excel.
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	
13a	Number of species reference collections established and handed over to host country(s)	
13b	Number of species reference collections enhanced	
Dissemination Outputs		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work in host country	Research findings have been presented to the island's legislature. Informal discussion meetings have also been held with local NGO conservation groups. Also, ad hoc talks/tours have been arranged for tourists to the island.
14c	Numbers of conferences/seminars/workshops attended at which finding from Darwin project work have been presented/disseminated in the host country	What happened to 14B? Results of the Darwin project have been presented in 6 seminars in the UK.
15a	Number of national press releases or publicity articles in host country(s)	None. These were not necessary as the project received extensive coverage on St Helena.
15b	Number of local press releases or publicity articles in host country(s)	See 15A.
15c	Number of national press releases or publicity articles in UK	1.
15d	Number of local press releases or publicity articles in UK	1. Resulting in an article in the Reading Post.
16a	Number of issues of newsletters produced in the host country(s)	Bi-annual throughout the project - 6
16b	Estimated circulation of each newsletter in the host country(s)	40
16c	Estimated circulation of each newsletter in the UK	10
17a	Number of dissemination networks established in host country	1. This involves ECS staff, Rebecca Cairns-Wicks, and the UK project team.
17c	Number of dissemination networks enhanced/extended in host country	

Code	Total to date (reduce box)	Detail (←expand box)
18a	Number of national TV programmes/features in host country(s)	None.
18b	Number of national TV programme/features in the UK	None, but the project was featured extensively in a wildlife programme produced in South Africa.
18c	Number of local TV programme/features in host country	
18d	Number of local TV programme features in the UK	
19a	Number of national radio interviews/features in host country(s)	8. This proved to be by far the most effective way of using the media to raise awareness of the project on St Helena.
19b	Number of national radio interviews/features in the UK	None.
19c	Number of local radio interviews/features in host country (s)	
19d	Number of local radio interviews/features in the UK	
Physical Outputs		
20	Estimated value (£s) of physical assets handed over to host country(s)	
21	Number of permanent educational/training/research facilities or organisation established	
22	Number of permanent field plots established	
23	Value of additional resources raised for project	

16. Appendix III: Publications

Provide full details of all publications and material that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Details will be recorded on the Darwin Monitoring Website Publications database which is currently being compiled.

Mark (*) all publications and other material that you have included with this report

Type * (e.g. journals, manual, CDs)	**Detail** (title, author, year)	**Publishers** (name, city)	**Available from** (e.g. contact address, website)	**Cost £**
***Journal**	McCulloch, N. & Norris, K. 2001. Diagnosing the cause of population changes: localised habitat change and the decline of the endangered St Helena wirebird. *Journal of Applied Ecology* **38,** 771-783.	**Blackwells, Oxford**	**Reprints available from me**	**Free**

17. Appendix IV: Darwin Contacts

To assist us with future evaluation work and feedback on your report, please provide contact details below.

Project Title	Ecology and conservation of the endemic St Helena wirebird
Ref. No.	**162/7/115**
UK Leader Details	
Name	Dr Ken Norris
Role within Darwin Project	Project co-ordinator
Address	School of Animal & Microbial Sciences, University of Reading, Whiteknights, PO Box 228, Reading RG6 6AJ
Phone	
Fax	
Email	
Other UK Contact (if relevant)	
Name	
Role within Darwin Project	
Address	
Phone	
Fax	
Email	
Partner 1	
Name	Rebecca Cairns-Wicks
Organisation	St Helena Government (former head of ECS)
Role within Darwin Project	Initial planning and dissemination of project results
Address	Mount Pleasant, Sandy Bay, Island of St Helena, South Atlantic Ocean
Fax	
Email	
Partner 2 (if relevant)	
Name	Mr V Williams
Organisation	Conservation Officer in ECS
Role within Darwin Project	Day-to-day contact with ECS, co-ordination and planning of training, long-term monitoring
Address	Conservation Officer, Agriculture & Natural Resources Department, Scotland, Island of St Helena, South Atlantic Ocean
Fax	
Email	