Darwin Initiative for the Survival of Species

Annual Report

1. Darwin Project Information

Project title	*An integrated conservation programme for threatened endemic forest species in Chile*
Country(ies)	*Chile*
Contractor	*RBGE/UACH*
Project Reference No.	*162/11/012*
Grant Value	*£166 505*
Start/Finishing dates	*April 2002 - April 2005*
Reporting period	*April 2002 – April 2003*

2. Project Background

Briefly describe the location and circumstances of the project and the problem that the project aims to tackle.

The rainforests of southern and central Chile represent one quarter of the world's remaining temperate rainforests - 90% of the 900 vascular plant species are endemic and many of these exist only in fragmented forests outside of protected areas. The aim of this project is to provide long-term protection through an integrated programme of ex-situ and in-situ conservation involving a wide range of stakeholders. This will be accomplished by i) providing the necessary training for key horticultural and scientific personnel in ex-situ and in-situ conservation methodologies, ii) working with private landowners to establish agreements in order to protect key endemic species and the development of habitat management plans, iii) ensuring the long term success of the project through an international benefit sharing agreement.

3. Project Objectives

State 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.

Project purpose: *To provide Chilean researchers and local land-owners with the knowledge and skills to enable them to protect populations of threatened forest species not included in Chile's network of protected areas, by integrating ex-situ with in-situ conservation, in line with the objectives of the national native forest conservation and management policy.*

Project objectives : *To provide the necessary training for key horticultural and scientific personnel in ex-situ and in-situ conservation methodologies; to establish agreements with private landowners in order to protect key endemic species; the development of habitat management plans; to ensure the long term success of the project through an international benefit sharing agreement.*

- Have the objectives or proposed operational plan been modified over the last year and have these changes been approved by the Darwin Secretariat?
  The objectives of the plan have not been changed. The management structure of

the project has been modified so that in Chile Cristian Echeverria is now joint leader along with Prof. Antonio Lara and Paulina Hechenleitner is the field co-ordinator. Modifications were also made to the operational plan as they had been specified in the agreed schedule. Database installation took place 2 months early due to the unavailability of key UK staff at the scheduled time. A workshop/training event that was scheduled for the end of the second visit by the UK staff was deferred until the start of the second year. The workshop will be run by people who have already received training. The results of the workshop will provide a means for assessing the effectiveness of the initial training. Publicity releases have also been deferred as it was decided that releasing early results would be premature.

4. Progress

- Please provide a brief history of the project to the beginning of this reporting period. (1 para.)

  Provisional approval for the project was received in mid-March 2002 but final confirmation was not received until June due to financial reorganisation at DEFRA. This was followed by the arrival of the first Darwin Scholar (Gonzalo Medel) who undertook training over the next 4 months. In September the UK co-ordinator and the database consultant visited Chile to install the collections management software, carry out the associated training and undertake an evaluation of the arboretum's living collections. In November, 2002, the first formal meeting with representatives of the UK horticultural trade took place. In January 2003, 2 of the UK project team visited Chile for 4 weeks of field work and training. In May 2002, Chilean project members initiated research and field work aimed at ground truthing previously reported localities for threatened species and establishing contact with private companies and individuals who have land where those species grow. This work has continued throughout the reporting period.

- Summarise progress over the last year against the agreed baseline timetable for the period. Explain differences including any slippage or additional outputs and activities.

PROJECT IMPLEMENTATION TIMETABLE	
Date	***Key milestones***
2002/2003	
May	*Discussions with UK horticultural industry on the commercialisation of ornamental Chilean plants undertaken.*
July	*Arrival, training and departure of first Chilean Postgraduate Darwin Scholar (CPDS) in UK*
November	*First visit by UK staff - installation of database, training, production of development plan for arboretum takes place Accessioning existing plants of conservation importance completed*
	Dialogues through CONAF with governmental agencies for CBD based agreement for commercialisation of Chilean plants in the UK take place
February	*2nd UK staff visit – project progress review, 2nd training, field work, habitat management plans produced*
March	*Annual report completed*

Overall, the project has progressed according to the agreed baseline timetable.

May *- Discussions with UK horticultural Industry on the commercialisation of Chilean plants were initiated in May and have continued. A small committee including professional nurserymen, horticultural consultants and project members has been formed.*

July – October*; Gonzalo Medel undertook a 4 month training placement as the first Chilean Postgraduate Darwin Scholar. This included a placement at Highgrove Gardens with His Royal Highness, Prince Charles.*

November *– first visit by UK staff. This was brought forward to September due to the commitments of the UK staff to other projects including another Darwin project. The database was successfully installed and the necessary training carried out. An evaluation of the arboretum was also carried out.*

November - *Dialogues through CONAF with government agencies for CBD based agreement for commercialisation. Discussions were initiated by Chilean project members as early as July 2002 with agencies including CONAMA (Comission Nacional de Media Ambiente). These sensitive discussions are still at an early stage but response has been positive (see section on collaboration).*

February – *UK staff 2nd visit. Extensive field work and training was carried out in the targeted regions. Habitat management plans are still being drafted.*

March – *annual report – delayed due to travel commitments of UK staff and delays in receiving annual expenditure statements.*

- Provide an account of the project's research, training, and/or technical work during the last year. This should include discussion on selection criteria for participants, research and training methodologies as well as results. Please **summarise** techniques and results and, if necessary, provide more detailed information in appendices (this may include cross-references to attached publications).

First Chilean Postgraduate Scholar. Gonzalo Medel. The successful candidate was chosen from a field of 5 applicants, following formal interviews with a panel of senior Chilean collaborators, including Prof. Lara and Prof. le Quesne. Candidates were assessed on the knowledge of current conservation issues in Chile, academic background, English language skills. He arrived in July 2002 for a 4 month placement at the RBGE. During this time, training focussed on living collection management and ex-situ conservation. It included practical training in propagation, nursery and botanic garden management. Supervision was provided by RBGE staff from the Horticulture division as well as by the project leader, M. Gardner. He spent 2 weeks at Highrove Gardens with His Royal Highness, Prince Charles and 2 weeks at Younger Botanic Garden assisting with the development of a major new display of Chilean plants. He also gave a presentation to RBGE staff concerning his work on the development of Chilean native plants for commercial and agricultural use. Since his return to Chile, he has been employed within the University's arboretum and has been assisting with the development of the living collections and other apects of the project's work under the supervision of one of the Chilean members of the project (P. Hechenleitner). His salary costs have been met by UACH

First training and database installation visit. The visit by the UK project leader and the computer specialist took place between 7th and 28th September. 8 staff were trained over one week in the use of the database and the recording of Living Collections. The trainees included staff from other related conservation projects (e.g. FONDEF – a major, Chilean government funded project aimed at the production of common Chilean native plants for use within Chile). Training certificates were awarded. A lecture about the aims and objectives of the project was presented and attended by 300 staff and students from the university. Since the installation there has been regular contact between the database administrator and UK staff.

UK staff 2nd visit – The 2nd visit took place between the 15th January and the 13th February. The main aims of the visit were to undertake field work to ground-truth the results of previous surveys, inventory sites with threatened endemic woody plants, collect materials for in-country ex-situ conservation work and for use during the training of the 2nd and 3rd Chilean Postgraduate Darwin Scholars. Intensive training was provided for 2 Chilean staff over the course of the visit. Work that had been undertaken by our Chilean trainees within the arboretum was evaluated. Sites that had been selected for conservation work were also visited and evaluated. The visit was enhanced by the extremely good relationships that our field co-ordinator and her colleagues had established with local and regional CONAF officials and other relevant organisations.

Research and Technical Work

During the field work in January and February extensive collections were made from five of the most important threatened endemic woody species.

For four two of the species the majority of reported locations were visited, populations surveyed and collections made. A significant number of the previously published records proved to be inaccurate, either because of poor original data or

because of recent changes in land use. New distribution maps are being created and should be published early in the third year of the project after further survey work early in 2004.

DNA collections of Legrandia concinna were used in a joint project with a university in Argentina while collections from Pitavia punctata will be used to provide training material for the 2nd year Darwin Postgraduate scholar.

The last remaining population in the Coastal Cordillera of the threatened endemic conifer Prumnopitys andina was located on a small property owned by the local mayor. The main part of the populationon an adjoining property owned by a timber company had been destroyed within the last 5 years to make way for new pine plantation. This site is likely to become a flagship site for the network that is being established.

In October 2002, the Chilean field co-ordinator undertook training of an undergraduate and a postgraduate from a Regional Parque near Concepcion in which one of the principal populations of Citronella mucronata (one of the targeted species) is located. They were trained in collection management, propagation and field collecting techniques with the arboretum at Valdivia. The training was followed up by a visit to the nursery of the Parque during the visit by the UK staff. She also spent a further 10 days in the field doing site surveys, accompanied by either another project member or by undergraduate students.

Discuss any significant difficulties encountered during the year.

No significant difficulties have been encountered except for a delay in the final transfer of money to our Chilean collaborators. The delay is being investigated by the RBGE's finance department

- Has the design of the project been enhanced over the last year, e.g. refining methods, indicators for measuring achievements, exit strategies?

The overall design of the project and its principal objectives remains the same.

- Present a timetable (workplan) for the next reporting period.

2003/2004	
May -November	*Establishment of field plots in arboretum using material collected during Jan03 visit*
	Chilean personnel continue protection work with landowners.
	Dialogue continued with CONAF, Chilean governmental agencies and UK horticultural industry for CBD based agreement for UK commercialisation of Chilean plants
October	*Arrival, training and departure of second CPDS in UK*
December	*Habitat management plans in place*
February	*3rd UK staff visit – project progress review takes place*
	3rd training, field work takes place
March	*Benefit Sharing Agreement - with CONAF, Chilean governmental agencies and UK horticultural industry for CBD based agreement for commercialization of Chilean plants in the UK*

5. Partnerships

- Describe collaboration between UK and host country partner(s) over the last year. Are there difficulties or unforeseen problems or advantages of these relationships?

Collaboration between the two principal partners (RBGE and UACH) is excellent due to the close relationships of the project leaders and the high quality of the university staff responsible for the arboretum in Valdivia. The good relationships between the project members and CONAF, are reflected in the granting of a 3 year permit for the collection of living material from National Parks and Nature reserves for the purposes of the project. They are also reflected in the tremendous support that the project has received from CONAF field staff. Many of these people have an intimate knowledge of the local flora and of the location of unprotected populations of threatened species.

Has the project been able to collaborate with similar projects in the host country or establish new links with / between local or international organisations involved in biodiversity conservation?

In July 2002 one of the project leaders (C. Echeverria) presented the objectives of the project to CONAMA and CONAF officials responsible for biodiversity conservation in Region VII. Agreements on seed collection, in-situ conservation and information exchange between the project and the departments were reached.

Collaborative links have been established with the Universidad Nacional del Comahue, Bariloche, Argentina for research into the genetic diversity of Legrandia concinna as part of this project. Extra funding has been raised to support this work.

Links have also been established with the Universidad Catolica de Temuco, Chile and the University of Talca. Both of these institutions are involved in biodiversity conservation research in their respective Regions.

Staff from FONDEF project – a major, Chilean government funded project aimed at the production of common Chilean native plants for use within Chile – have been involved in training workshops on the propagation of threatened plants and the management of living collections. As this project is based in Valdivia, there will be plenty of opportunities for further collaboration.

A link has been established with the Bioforest company. This company has been set up by Forestal Arauco, one of the major forestry companies in Chile. Bioforest's main role is to survey, document and provide management advice for the fragmented native forests that are within the ownership of Forestal Arauco. Many of these areas are within the regions of Chile that this Darwin project is focussing on and they contain many of the unprotected populations of the threatened endemic woody species.

The Darwin project will be reporting its findings regarding the threatened conifers of the targeted areas to the IUCN Conifer Specialist Group (see Research and Technical Section above).

We expect that collaboration will widen during the lifetime of the project.

6. Impact and Sustainability

- Discuss the profile of the project within the country and what efforts have been made during the year to promote the work. What evidence is there for increasing interest and capacity for biodiversity resulting from the project? Are satisfactory exit strategies for the project in place?

The project leader in Chile (Prof. Antonio Lara) is involved with presidential committees responsible for the formulation of new policies for the conservation and

sustainable management of native forests so that this project is being represented at the highest levels in the Chilean government.

Project leaders (C. Echeverria and A. Lara) have been invited to contribute to the development of a 'Strategy for biodiversity conservation for the VII and X Regions' currently being formulated by CONAMA officials. This invitation is an early indication of increasing interest and capacity for biodiversity resulting from this project.

During the 1st visit by the UK project leader a lecture was given to 100 staff and students at the university in Valdivia. During the 2nd visit by UK staff, a series of meetings were held with local and regional CONAF officials to inform them of the progress of the project. Meetings were also held with staff from the major logging companies who are responsible for the management of fragments of native forest within exotic timber plantations. In the first year of the project there have been few opportunities to publicise the project through the popular media but we expect that as the project develops, this will change.

Some of the work of the first year has been aimed at initiating exit strategies and making sure that the legacy of the project goes well beyond its finishing date. Discussions with UK horticultural industry continue, the technicians who were trained in the first year will be undertaking independent training of other technicians in the second year and the project leader in Chile is still involved in the formulation of forest policy.

7. Post-Project Follow up Activities (max 300 words)

This section should be completed ONLY if your project is nearing completion (penultimate or final year) and you wish to be considered for Post Project Funding. *Each year, a small number of Darwin projects will be invited to apply for funding. Selection of these projects will be based on promising project work, reviews to date, and your comments within this section. Further information on this scheme is available from the DEFRA website.*

- From project progress so far, what follow-up activities would help to embed or consolidate the results of your Darwin project and why would you consider these as suitable for Darwin Post Project Funding?

Not Applicable

- What evidence is there of strong commitment and capacity by host country partners to enable them to play a major role in follow-up activities?

Not Applicable

8. Outputs, Outcomes and Dissemination

- Please expand and complete Table 1. **Quantify** project outputs over the last year using the coding and format from the Darwin Initiative Standard Output Measures (see website for details) and give a brief description. Please list and report on appropriate Code Nos. only. The level of detail required is specified in the Guidance notes on Output Definitions, which accompanies the List of Standard Output Measures.

Table 1. Project Outputs (According to Standard Output Measures)

Schedule Code No	Schedule Quantity	Achieved Code	Achieved Quantity	Description
July-October – Darwin Postgraduate Scholar in UK				
4C/4D	1/16	4C/4D	1/16	16 weeks training for 1 postgraduate Darwin Scholar (G. Medel, Chile)
September – 1st visit by UK staff				
12A/4C, 4D	1/3/3	12A, 4A/4B 4C, 4D	1 2/2 1/1	1 computer based database installed, 1 postgraduate and 2 undergraduates trained for one week in use of database
13A	1	13A	1	Collection established
		4C/4D	2/4	Two weeks training for plant collection management for 2 postgraduate students
7	1	7	2	Model management plan for establishment of ex-situ collections within arboretum, manual for data management of living collections
8	4 (2x2)	8	3	UK project leader and computer specialist in country for 2 and 1 week respectively
January – February – 2nd visit by UK staff				
8	7	8	8	2 UK staff in country for 4 weeks each
4C/D	3/12	4C/D	2/8	2 postgraduate students trained during field work
9	5	9	0	Habitat management plans still being drafted; awaiting results of laboratory work by new collaborator Universidad Nacional del Comahue, Bariloche
14	1			4 day workshop on plant collections and database management that was planned as follow up to the training given during the first visit was deferred till the start of the second year (april 2003) to allow a wider range of people from relevant projects to attend. It will be run by original trainees as training for new participants and as an opportunity to assess the effectiveness of the training given to the trainers. This workshop has been carried out and will be reported as part of the second year outputs.
4ABCD	13			See above
By April 2003				
15 A/B	4	15B	0	Chilean press releases, local and/or national – deferred till 2nd year e.g. EL DIARIO AUSTRAL DE VALDIVIA, 21/4/2003 2003.(About the Seminar on Conservation of Chilean Plants).

15C/D	3	15C/D	0	UK press releases, local and/or national - deferred till 2nd year
19A/C	1,2	19A/C	0	National radio interviews – deferred till 2nd year
Other outputs				
		4A/B	1/2	2 weeks training in October 2002 for 1 undergraduate at the University arboretum
		4C/D	1/2	2 weeks training in October 2002 for one postgraduate at the University arboretum
		11A	1	The propagators Potential of the flora of Chile, International Plant Propagator's Society, *in press*
		14B	1	Lecture at the International Plant Propagators Society Annual Meeting, Southampton, August 2002
		23	£1200	Salary Costs for employment of Gonzalo Medel (Darwin Postgraduate Scholar at University arboretum November – March 2002
		23	Ca £700	BIOCORES. An European Union project: DGIAC4-CT-2001-10095. Funding for cost of RAPD analysis of populations of Legrandia concinna, one of the target species. Research carried out at Universidad Nacional del Comahue, Bariloche, Argentina

- Explain differences in actual outputs against those agreed in the initial 'Project Implementation Timetable' and the 'Project Outputs Schedule', i.e. what outputs were not achieved or only partly achieved? Were additional outputs achieved?

Please see explanations within the table

- In Table 2, provide full details of all publications and material produced over the last year that can be publicly accessed. Details will be recorded on the Darwin Monitoring Website Publications Database. Mark (*) all publications and other material that you have included with this report.

Table 2: Publications

Type * (e.g. journal paper, book, manual, CD)	Detail (e.g. title, authors, journal, year, pages)	Publishers (name, city)	Available from (e.g. contact address, email address, website)	Cost £

As this is the first year, publicly accessible publications are still being drafted.

- Provide details of dissemination activities in the host country during the year. Will these activities be continued by the host country when the project finishes, and how will this be funded and implemented?

Dissemination activities have mainly consisted of informal meetings with various government departments, private forestry company representatives, university departments in Chile. In the UK dissemination activities have been restricted to

discussions with horticultural industry representatives. Two workshops were planned – the first workshop took place during the database installation in September and the second was planned to take place during the 2nd visit by UK staff (February 2003). As many of the people who were going to attend at that time, it was decided to defer the workshop until April when it would be run by recently trained Chileans.

9. Project Expenditure

- Please expand and complete Table 3.

Table 3: Project expenditure during the reporting period

Item	Budget	Expenditure

- Highlight any recently agreed changes to the budget and explain any variation in expenditure where this is +/- 10% of the budget

10 *Monitoring, Evaluation and Lessons*

- Discuss methods employed to monitor and evaluate the project this year. How can you demonstrate that the outputs and outcomes of the project actually contribute to the project purpose? i.e. what are the indicators of achievements (both qualitative and quantitative) and how are you measuring these?

The purpose of the project is to *provide Chilean researchers and local land-owners with the knowledge and skills to enable them to protect populations of threatened forest species not included in Chile's network of protected areas, by integrating ex-situ with in-situ conservation, in line with the objectives of the national native forest conservation and management policy*

There are 3 principal indicators that underpin the purpose.
1 Development and implementation of various plans and agreements:
2 Training of researchers and horticultural staff
3 production of manuals and other publications for

Principal Indicators	**Evaluation methods and progress**
1.1 habitat management plans	Field surveys undertaken; 5 threatened endemic species targeted; voucher specimens of associated plants made; site description with other field notes being collated.
1.2 ex-situ collections	Living material collected during field work, field notes kept, records established, plants in propagation. Measured and evaluated by physical inspection of records and plants during visits by UK staff
1.3 agreements with local owners	Sites visited and evaluated; project explained, negotiations initiated, correspondence recorded.
1.4 agreements with Chilean government	Meetings arranged with officials, meetings attended, minutes recorded or report to project leader made.
1.5 agreements with UK industry	Meetings arranged with representatives, meetings attended, minutes recorded or discussions reported to project leader.
2 Chilean researchers and horticultural staff trained	Workshops held, certificates of attendance and achievement awarded; report made.
3.1 habitat management manual/publications	Collation of information from field work initiated. Updated distribution maps in preparation.
3.2 ex-situ collection management	Collections of living material made; propagation trials started and recorded; trial plantings started. Information for manual being collated
3.3 propagation manual	propagation trials started and recorded. Success rates monitored and reported. Information for manual being collated

- Are there lessons that you learned from this years work and can you build this learning into future plans?

The first years work has reinforced lessons that we have learnt from other projects (including other Darwin project). These involve the benefits of having good local contacts, the benefits of intensively training capable people and then supporting them to train other people. Within this Darwin Project, the principal field co-ordinator, Paulina Hechenleitner, is a good example. The second year of the project promises to be as busy as the first and should be very productive.

10. Author(s) / Date

Martin Gardner

Antonio Lara

Table A *- Logical framework.*

Project summary	*Measurable indicators*	*Means of verification*	*Important assumptions*
Goal ***To assist countries rich in biodiversity but poor in resources with the conservation of biological diversity and implementation of the Biodiversity Convention***			
Purpose To provide Chilean researchers and local land-owners with the knowledge and skills to enable them to protect populations of threatened forest species not included in Chile's network of protected areas, by integrating ex-situ with in-situ conservation, in line with the objectives of the national native forest conservation and management policy.	Development and implementation of habitat management plans, ex-situ collections, agreements with local owners, Chilean government and UK horticultural industry 35 Chilean researchers and horticultural staff trained in and able to display the skills necessary for protecting threatened species outside of protected areas Production of manuals and other publications containing protocols for habitat management, ex-situ collection management and propagation	Annual visits by UK experts Workshop/training reports Publications (manuals research papers etc) available to trained Chilean personnel and other interested parties Oral presentations by trainees Data collected and collections established by Chilean staff and discussed with UK experts during visits	That the need for integrated ex-situ and in-situ conservation programmes will continue That agreements made will continue to be honoured
Outputs	Measurable Indicators	Means of Verification	Important Assumptions
1. Agreement with UK horticultural wholesaler and the Chilean government to commercialise amenity Chilean plants as a source of income to support the long-term conservation of threatened endemic species.	-Signed international agreements obtained fulfilling the requirements of the CBD	- Agreements implemented and working	Agreements made are honoured by contracting parties
2. Develop agreements with local landowners for the long-term protection of key habitats containing threatened endemic species.	- Signed agreements obtained which comply with Chilean legislation - Formal recognition of new protected areas	- Protected areas designated	- Continued support from local landowners - Wild fires do not cause habitat loss
3. Develop the arboretum of (UACH) into a centre of excellence for the management of research ex-situ conservation collections	- Key Chileans trained in appropriate skills	- Completed training, establishment of ex-situ collections	- Continued support from the UACH

Activities			
Networking with local landowners in order to identify priority sites	- Suitable sites identified and agreements established	- Management plans produced	- Landowners will co-operate
Meetings with Chilean government officials and UK horticultural trade to discuss the commercialisation of Chilean plants in the UK	- Agreements obtained which comply with the CBD	- Agreements working	- Parties continue to honour agreements
Botanical survey supported by voucher herbarium specimens	- Species lists compiled, herbarium specimens identified and mounted with full documentation	- Species lists published and herbarium material disseminated	
DNA and propagation materials collected	- Plants successfully propagated. DNA samples used for biodiversity assessment research	- Manual and peer-reviewed scientific papers published	- Populations can withstand seed collections
Practical in-situ measures taken	- Protected areas fenced	- Protected areas recognised	
Collection and propagation of horticultural plants for commerce	- Plants successfully propagated and grown on	- Plant acquisitions achieved in line with signed agreements	
Training Chilean scientific and horticultural students in methodologies necessary for conserving threatened endemic species	- Fully trained personnel	- Relevant publications and manuals produced and personnel carrying out conservation work	Opportunities for employment in conservation work will be available
Long-term management plan for arboretum	- Publication of plan for internal use and as a model for other collection holders	- Implementation of Plan	- Continued commitment from UACH
Planting of threatened species for ex-situ conservation.	- Established plantings of threatened endemics		
Installation of a database for managing ex-situ conservation collections	- Dataset containing plant records of germplasm in arboretum	- Improved collections of endemic species fully documented and reported on in UACH internal reports	