

# *DARWIN INITIATIVE*

## *ANNUAL REPORT 2*



### *INVENTORY AND CONSERVATION OF THE BRYOFLORA OF SOUTH WESTERN PATAGONIA*

#### *BIOLOGICAL SCIENCES QUEEN MARY UNIVERSITY OF LONDON*



***Participants in Darwin Initiative “Miniature Forests of Cape Horn” session,  
Sustainable Tourism Conference, Santiago, August 2005***

# ***Darwin Initiative***

## ***Annual Report***

### **1. Darwin Project Information**

Project Ref. Number	<i>13024</i>
Project Title	<i>Inventory and Conservation of the Bryoflora of South Western Patagonia</i>
Country(ies)	<i>Chile</i>
UK Contractor	<i>Department of Biological Sciences, Queen Mary University of London</i>
Partner Organisation(s)	<i>Universidad de Magallanes/Omora Foundation</i>
Darwin Grant Value	<i>£186,280 (total); £59,160 (Year 2)</i>
Start/End dates	<i>September 2004 – March 2007</i>
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	<i>April 2005 to April 2006. Annual Report 2</i>
Project website	<i>N/A</i>
Author(s), date	<i>Prof Jeff Duckett, Dr Shaun Russell, May 15, 2006</i>

### **2. Project Background**

The Magellanic Province of southern Chile is a “hotspot” for bryophyte diversity in South America, but many more species remain to be discovered especially among the Hepatics. There is a dearth of local bryological expertise, scant protection for indigenous flora and severe threats to native vegetation. The region’s national parks have no permanent staff, and there is increasing habitat-loss through farming and forestry, including moss-collecting and peat-digging. Relaxation of military control in the Fuegian Channel zone has led to rapidly increasing exploitation of natural resources, and adverse impacts on local habitats and remnant native American populations who hold endangered ethno-botanical knowledge. This project addresses these issues through base-line survey and inventory of the bryoflora, capacitation of local biologists through infrastructure development and training, plus conservation awareness-raising among local, regional and national stakeholders.

### **3. Project Purpose and Outputs**

“To assist a poorly-resourced academic institution (Universidad de Magallanes, Punta Arenas – “UMAG”) and NGO (Omora Foundation) in southern Chile to improve knowledge and contribute to the protection of the inadequately-known but extremely rich bryoflora of the Magellanic Province. Through training and awareness-raising, to ameliorate the habitat impacts of commercial moss-collecting and peat digging in the south western region of Chile. To establish in vitro cryptogamic conservation laboratory facilities in southern Chile, maintained by trained staff. To provide biological support for regional development planning and Chile’s National Biodiversity Strategy, including the World Heritage Site candidacy of Charles Darwin’s landing site at Wulaia Bay, adjacent to the Beagle Channel. See logical framework in Appendix, set against Year 2 progress and achievements in Annex 1.

Significantly enhanced outputs have been secured during Year 2 of the project. The team committed to achieve impacts under ten code headings during the three years of the project. In fact, during Year 2 it has been possible to report accomplishments under 15 code headings. There has been some re-scheduling of activity in order to achieve these greater impacts (see under "Progress" below).

#### **4. Progress**

Considerable effort was expended by the UK and Chilean partners in pre-project activity, including earlier exploratory field work and training activity funded by the UK and Chilean governments. In Year 1, only six months of activity were possible due to the late decision-start of the project. However, all Year 1 targets were achieved and exceeded, including setting-up of a bryophyte culture laboratory at the Universidad de Magallanes; completion of a 3-week field survey expedition; delivery of 151 person-days of bryology and conservation training (against 120 planned); assistance to Chilean partners with application for UNESCO "Biosphere Reserve" status for the Cape Horn region; and assistance to members of the native American community in the study area in preparation of land claims and planning for ecotourism-based livelihoods.

Project progress over the last year is discussed below, against the outputs and milestones agreed in the original application. Progress is also summarised in Annex 1, against the commitments in the original logical framework (Appendix below).

##### Year 2 Outputs (original commitments in italics)

###### *"Biological report - Wulaia prospective World Heritage Site"*

Biological surveys at Wulaia have been completed and conservation recommendations included in the successful Nomination Document for UNESCO "Biosphere Reserve" status for the wider region that includes the Wulaia site (Annex 2).

###### *"Year 2 field expedition to western Fuegia (3 UK staff for 2 weeks)"*

As a result of findings during the Year 1 expedition, the Year 2 expedition has been postponed for 8 months (into Year 3) to allow spring-season study of the drier parts of the study area. This second expedition has also been extended to 4 weeks duration (Darwin Secretariat informed of re-scheduling).

###### *"Year 2 training courses - 24 (2x12) Chilean environment agency staff and natural resource-users trained in bryophyte/habitat conservation for 2 weeks (2x1-week)" [240 person-days of training]*

Chilean collaborators requested shorter exposure for larger numbers of practitioners. They also requested re-scheduling of part of the training to accommodate tourism operators during the less busy "off-season" (southern winter). 156 conservation, forestry, farming and tourism practitioners were therefore trained during a 2-day Sustainable Tourism Seminar held in Santiago in August 2005 (Annex 5). The event was jointly sponsored by The Darwin Initiative, the British Embassy and the Chilean Tourism Service. Darwin project partners Dr Shaun Russell and Dr Ricardo Rozzi presented a day-long session on "The Miniature Forests of Cape Horn", and were assisted by project collaborators Dr Harold Goodwin, Dr Mitzi Acevedo and Jorge Chavez. The seminar audience included key target personnel (including Directors) of the most relevant national and regional organisations for conservation and development planning in southern Chile (see British Embassy website: [www.britemb.cl/seminario/programa.html](http://www.britemb.cl/seminario/programa.html)).

16 practitioners at each of four sites are being intensively trained for 9 days (144 person-days) during June 2006. With the Santiago Seminar, this brings the total to 300 person-days of conservation training, against the 240-day commitment). To increase impact, this second course is being conducted at four institutions throughout Chile, instead of the single venue originally planned. The schedule for the course is as follows (see also Omora Foundation Newsletter - Annex 10).

Darwin Initiative Conservation Training Course 2006  
**“Exploring and Conserving the Miniature Forests of Cape Horn”**

Presenters: Dr Ricardo Rozzi, Dr Shaun Russell, Jorge Chavez,  
Ximena Arango, Nelson Navarro

June 9-11 Omora Foundation, Puerto Williams;  
June 14-17 Universidad de Magallanes, Punta Arenas;  
June 19 Universidad de Los Lagos, Puerto Montt;  
June 20 Universidad de Chile, Santiago.

*“4 UK staff for 2 weeks” [56 person-days in-country]*

3 UK staff spent one week (5-days) in-country for the Santiago Seminar, and 2 UK staff will spend 3 weeks (21 days) in-country during the June 2006 training course (total 57 person-days in-country).

*“In vitro laboratory joint studies and monitoring visit – 2 UK staff for 4 weeks”*

This activity has been re-scheduled to coincide with the postponed Year 2 spring-season expedition to the drier parts of the study region, and will involve at least 2 UK staff (Darwin Secretariat informed).

Year 2 Milestones (original commitments in italics)

*“Early scientific outcomes appearing in reports and bulletins 5/2005”*

Due to the high level of interest shown in this project by international collaborators, a much greater publication output has been achieved than envisaged (see publication list at Annex 9 which includes 2004-dated articles not published in time for inclusion in last year’s Report). An overview of the project and its initial findings was presented by team member Dr Shaun Russell at the Annual Symposium of the British Bryological Society, held at the University of Wales, Bangor on September 10<sup>th</sup>, 2005 (Annex 13). A poster presentation was also given at the Darwin Initiative Annual Workshop in London, on Feb 22<sup>nd</sup>, 2006 (Annex 12). Several more publications are in preparation and will be reported in Year 3.

*“Year 2 expedition and survey completed 2/2006”*

For the reasons of seasonality and representative habitat coverage given above, the Year 2 expedition has been re-scheduled from February to October 2006.

*“Conservators and resource-user’s courses completed 2/2006”*

Part of this conservation training was completed ahead of schedule in August 2005. The second and final part of the conservation training is being completed in June 2006 (see note above under “Year 2 Outputs – Year 2 Training Courses”).

In addition to the above activities, considerable scientific work has been carried out during Year 2, on the field collections made during Year 1. For the Mosses we have found that the Austral flora is very different from that seen in analogous northern temperate habitats; there are hardly any Hypnaceae or Mniaceae present in the southern south American flora; many austral pleurocarp and Bryalean acrocarp families are represented, e.g: Rhizogoniaceae, Ptychomitriaceae, Leptostomataceae, Lepyrodontaceae; and there are high levels of endemism which are of great interest for further study.

Findings for Liverworts include new records and a considerable extension of range for the monotypic family Grolleaceae (*Grollea antheliopsis*); new records for the rare monotypic genus *Pigafettoa* (*P. crenulata*); considerable extension of range for *Amphicephalozia* (known previously only from its type locality); *Adelanthus tenuis*, range extension and more common than previously thought; *Herzogiaria teres* now found south of the Beagle Channel.

Exciting discoveries are being made in the laboratory as specimens are studied in greater detail. Preliminary findings are listed in Annex 5 and include unique structural attributes which are providing new clues to the early evolution of the mosses, and fresh perspectives on the nature of liverwort-fungus symbioses.

The project timetable (workplan) for the next reporting period (Year 3) remains as set out in the original application, except for the addition of the re-scheduled Year 2 activities as explained above.

<i>Project implementation timetable</i>		
<b>Date</b>	<b>Financial year:</b>	<b>Key milestones</b>
<i>Jun 2006</i>	<i>Apr-Mar 2006/7</i>	<i>Final conservation training course delivered</i>
<i>Oct 2006</i>	<i>Apr-Mar 2006/7</i>	<i>Final field expedition completed</i>
<i>Oct 2006</i>	<i>Apr-Mar 2006/7</i>	<i>Final culture techniques training course delivered</i>
<i>Feb 2007</i>	<i>Apr-Mar 2006/7</i>	<i>Year 3 scientific articles published</i>
<i>Feb 2007</i>	<i>Apr-Mar 2006/7</i>	<i>Issue bryophyte/habitat conservation guidelines for regional development plan and national biodiversity strategy</i>
<i>Mar 2007</i>	<i>Apr-Mar 2006/7</i>	<i>Year 3 monitor, evaluate and final report</i>

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

Project not yet reviewed

## **6. Partnerships**

Collaboration between the UK and Chilean partners over the last year has been excellent, and has resulted in many more outputs than predicted. The collaboration has also drawn in other partners in Chile. The Darwin project team joined forces with Chilean NGOs, the Government Tourism Agency and the British Embassy to deliver the Santiago Sustainable Tourism Seminar. Links have also been continued with staff of earlier and existing Darwin Initiative projects in Chile, e.g. Raleigh International (Laguna San Rafael National Park) and the Darwin Fox project (Chiloe Island).

Darwin Initiative support to the main NGO project partner (the Omora Foundation) has assisted that organisation to draw-in many other local and international organisations to work on conservation issues in the Cape Horn region (see Omora Foundation website: [www.omora.org](http://www.omora.org)).

## **7. Impact and Sustainability**

Although taking place at the southern tip of the country, the Darwin Initiative project has achieved a high profile in Chile due to: 1) generous support for the project from the Governor of the Provincia Antartica Chilena, Sr Eduardo Barros, 2) the enthusiastic collaboration of the British Embassy, 3) the attraction of several eminent foreign scientists

to take part in the project (from the UK, USA, Spain, Germany, Finland etc.), 4) exposition of project activities in the capital city of Santiago, as well as in the south, 5) the national “celebrity” of the principal Chilean team member Dr Ricardo Rozzi. Dr Rozzi has received the “Oveja Blanca” media award for his initiatives in promoting research, education and conservation in the sub-Antarctic eco-region.

The declaration of the study region as a UNESCO Biosphere Reserve further raised the profile of Darwin Initiative activity in the year under review (see Omora Foundation website and list of media responses at Annex 11). Provincial Governor Eduardo Barros has taken a personal interest in the “Miniature Forests of Cape Horn” and “Tourism with a Hand-lens” aspects of the project. A clear sign of conservation impact was his agreement with the locally-elected Mayor of the Cape Horn Community, to suspend applications for exploitation of natural resources in the Chilean Antarctic Province (timber, gravel, peat extraction, and fish farming).

There are excellent portents for strong project legacy, as local support for “ecotourism” is growing rapidly in the study area. Chilean Government assistance to conservation work in the region is also increasing, and more international environmental scientists are being attracted to work in the area. An application for a large National Science Foundation grant has been submitted, that would allow American scientists and future international collaborators (including the Darwin Initiative team) to carry on bryological work beyond the currency of DI funding.

## **8. Outputs, Outcomes and Dissemination**

All pledged outputs for the project are being achieved, and significantly exceeded in many cases. This has resulted in additional outputs particularly in the area of publications, number of person-days of training, and overall conservation impact (see “Progress” above). There has been some re-scheduling of activity in order to strengthen these outcomes.

There has been considerably more dissemination of information on project activity than envisaged, due to high-profile events during the year under review, e.g. the British Embassy-supported Sustainable Tourism Seminar in the capital city of Santiago, which focussed on the Darwin Initiative project area for its principal case study. The declaration of the UNESCO “Cape Horn Biosphere Reserve” has also stimulated much more press coverage than envisaged. Lists of publications and press releases are given in Annexes 9 and 11. Dissemination of project activities are likely to continue well beyond Darwin funding due to capacitation of the partner NGO (Omora Foundation) and potential follow-on project funding from other sponsors.

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

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	TOTAL
6A	Number of people who received training in field & laboratory bryology and conservation	16	156			
6B	Person-weeks (5-day) training	30	31			
7	Types of training materials (instructional hand-outs)	-	1			
8	Number of working weeks spent by UK staff on project work in host country for the reporting period	21	3			
9	Number of habitat action plans produced for host country Government	-	1*			
10	Field Guide produced					
11B	Papers submitted to peer-reviewed journals	-	1			
13A	Number of species reference collections to be established in host country	-	3			
14B	Number of conferences attended at which Darwin project work was presented	-	2			
15A	National press release in host country	1	2			
15B	Local press releases in host country	-	2			
15D	Local press release in UK	1	-			
20	Estimated value of physical assets handed over to host country	£29000	-			
21	Permanent research facility established which will continue after Darwin funding ceases	1	-			
23	Value of resources raised from other sources for project work	-	£15000			

\* Successful UNESCO Biosphere Reserve Nomination

**Table 2: Publications**

Type *	Detail	Publishers	Available from	Cost £
(e.g. journals, manual, CDs)	(title, author, year)	(name, city)	(e.g. contact address, website)	

See Annex 9

## 9. Project Expenditure

- Please expand and complete Table 3.

**Table 3: Project expenditure during the reporting period (Defra Financial Year 01 April to 31 March)**

Item	Budget (please indicate which document you refer to if other than your project schedule)	Expenditure	Balance
Rent, rates, heating, overheads etc			
Office costs (e.g. postage, telephone, stationery)			
Travel and subsistence			
Printing			
Conferences, seminars, etc			
Capital items/equipment			
Others			
Salaries (specify)			
TOTAL			

- 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

Monitoring, evaluation and reporting of the project has been carried out by project staff, against the listed outputs and indicators, viz: completed survey and inventory; numbers of research publications; numbers of trained specialists and resource-users; laboratory facility functioning; numbers of contributions to conservation plans/initiatives (see Section 4 "Progress", Table 1 & logframe in Annex 1). Monitoring has kept the project within budget and on schedule to achieve all promised outputs by Year 3.

Evaluation of the project's impact has been carried out internally by senior project personnel, and externally by reference to media reports, feedback from collaborators and their in-country peers, and acceptance-rate of articles for publication. Examples of publications are given in Annex 9, and media reports in Annex 11.

The project has shown excellent value for money by exceeding its outputs in all areas. It has also attracted additional external funding, e.g. in joint delivery of the training programme to access higher numbers of trainees, and in expanding the Chilean research infrastructure to include a field laboratory that was not included in the original commitment.

Lessons learned from this year's work include the necessity of involving a wider community of UK, Chilean and other international researchers, to carry out taxonomic studies on the project's expedition collections. This is because UK capacity alone is

insufficient to address the many avenues for research that have opened up as a result of initial study of these unusual materials. Bryological specimens are therefore being exchanged with a widening community of researchers, who will further increase the publication outputs of the project over the next few years. We have also learned that there are unexpected areas of bryophyte diversity in the drier parts of the study area, and these will be sampled and studied by the second project expedition in Year 3 (October 2006).

**11. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum)**

The project team committed to producing a biological report in support of UNESCO World Heritage Site candidacy for a small part of the study area. In the event, several of the team members worked extremely hard to produce high-quality proposal documentation in respect of a much larger part of the study area. The team also briefed many Chilean Government personnel and visiting UNESCO inspection staff. This effort was repaid when, on June 28<sup>th</sup>, 2005, UNESCO designated much of the region to the south of the Beagle Channel under the “Man and the Biosphere” programme. The “Cape Horn Biosphere Reserve” is the first such area to be declared in Chile for 20 years, and has attracted considerable national and international publicity during the year under review (Annex 11).

The project team committed to producing 3 research papers by Year 3 of the project. In fact, members of the team and their Darwin-assisted collaborators have produced 17 publications by Year 2, including three bilingual (Spanish-English) books (see Annex 9).

Scientific findings have gone well beyond the species lists and basic biogeographical data that the team expected to generate. Specimens from southern Chile are showing up Gondwanalandic distributions, striking range extensions, unique structural/anatomical attributes, fresh perspectives on the nature of liverwort-fungus symbioses, and new clues to the early evolution of the mosses (Annex 5).

As a result of this Darwin Initiative project, Chile now has South America’s first bryophyte culture laboratory which is attracting scientists of international repute to conduct studies on the bryoflora of southern Chile. It is also acting as a resource for further cryptogamic science training activity in the region.

The project team committed to delivering conservation training to 24 Chilean natural resource managers during Year 2 of the project. In fact we reached 156 environmental, forestry, farming and tourism practitioners, with a further 144 person-days of conservation training scheduled for Year 3.

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

APPENDIX	Project Logical Framework
ANNEX 1	Report of progress and achievements against Logical Framework for Financial Year: 2005/2006
ANNEX 2	Chilean collaborator's message confirming completion of latest project publications
ANNEX 3	Darwin Initiative-supported nomination document for Cape Horn Biosphere Reserve, and UNESCO declaration certificate
ANNEX 4	Example of biodiversity conservation awareness-raising publication resulting from Darwin Initiative project work in southern Chile
ANNEX 5	Summary of progress with study of Year 1 expedition collections and resulting scientific discoveries
ANNEX 6	Brochure for Santiago Sustainable Tourism Conference, August 4-5, 2005
ANNEX 7	Cape Horn Biosphere Reserve Nomination Document, illustrative figures (pdf attached)
ANNEX 8	Checklist of the Mosses of Isla Navarino
ANNEX 9	Books and articles published with Darwin Initiative project assistance, 2004-6
ANNEX 10	Omora Foundation Newsletter (pdf attached)
ANNEX 11	Examples of media responses to UNESCO declaration of "Cape Horn Biosphere Reserve" (hyperlinks on Omora Foundation website)
ANNEX 12	"Inventory and Conservation of the Bryoflora of South-Western Patagonia". Poster presentation at Darwin Initiative Annual Workshop, London, Feb 22, 2006 (powerpoint file attached)
Annex 13	"The Bryophytes of Southern Chile", presentation at British Bryological Society Annual Symposium, University of Wales, Bangor, September 10th, 2005 (powerpoint file attached).

## APPENDIX - ORIGINAL LOGICAL FRAMEWORK

Project summary	Measurable indicators	Means of verification	Important assumptions
<p><i>Goal:</i> To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> <li>the conservation of biological diversity,</li> <li>the sustainable use of its components, and</li> <li>the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</li> </ul>			
<p>Purpose</p> <p>To better understand and conserve the threatened Magellanic “bryo-diversity hotspot” in southern Chile</p>	<p>Completed survey and inventory; nos. of research publications; nos. of trained specialists; lab established; nos. of contributions to conservation plans and initiatives</p>	<p>UK and Chilean project reports; international article citations; training reports/feedback; conservation agency reports</p>	<p>Availability of personnel over three years; timely publication of results; ongoing government and institutional support in Chile</p>
Outputs			
Knowledge of Fuegian bryophyte diversity significantly improved	Comprehensive inventory of Fuegian bryophyte species published	Appearance of new Fuegian bryophyte list in international journal	Commitment of project partners to outputs on schedule
Enhanced understanding of relationships and functioning of Fuegian bryophyte vegetation	Research papers on taxonomy, biogeography and ecology of Fuegian bryophytes produced	Appearance of publication series in bryological and/or conservation journals	Judicious selection of print media for early and wide publication of results
Capacitation of local biologists for bryological survey, research and conservation.	Completion of 2-week course in bryophyte culture and conservation for 12 Chilean & Argentinean biologists.	Course report and feedback forms, plus BBS bulletins	Sufficient engagement of local biologists with training initiative
Chilean conservation agencies and natural resource users influenced to protect bryophyte-rich habitat	Completion of 2x1-week courses for 24 Chilean conservation and forestry staff, and representatives of farming and tourism sectors	Course report and feedback forms, BBS bulletins and conservation agency field reports	Interest of trainees from conservation/forestry agencies, and the farming and tourism sectors sustained
Local capacity for <i>in vitro</i> culture of endangered cryptogam species established	<i>In vitro</i> facilities established and functioning, and staff trained at UMAG/IP	UMAG research reports, BBS bulletins and Darwin reporting	Ongoing UMAG commitment to project, and staff availability
Conservation of Fuegian vegetation and habitats enhanced	Project inputs to Biodiversity Action Plan and regional development plan secured	CONAMA reports on BAP progress, Magellanian Region Development Plan process documents	Continued support for Fuegian bryo-diversity initiative from regional and local interests
Activities	<b>Activity Milestones (Summary of Project Implementation Timetable)</b>		
Year 1 Field Survey	Year 1 expedition and survey completed 1/2005		
Bryology training course	Chilean bryological and <i>in vitro</i> culture training course completed 2/2005		
<i>In vitro</i> lab established	<i>In vitro</i> laboratory staff and facilities functioning at Instituto de la Patagonica 2/2005		
Preliminary results	Early scientific outcomes appearing in reports and bulletins 5/2005		
Year 2 Field Survey	Year 2 expedition and survey completed 2/2006		
Conservation courses	Conservators and resource-users courses completed 2/2006		
Conservation impact	Recommendations presented - biodiversity action and regional development plans 5/2006		
Year 3 Results	Full inventory and first formal international research publications appearing 3/2007		
Reporting	Darwin final report 3/2007		

## Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2005/2006

Project summary	Measurable Indicators	Progress and Achievements April 2005-Mar 2006	Actions required/planned for next period
<p><b>Goal:</b> To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> <li>• The conservation of biological diversity,</li> <li>• The sustainable use of its components, and</li> <li>• The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</li> </ul>			
<p><b>Purpose</b> <i>(insert original project purpose statement)</i></p> <p>To better understand and conserve the threatened Magellanic “bryo-diversity hotspot” in southern Chile</p>	<p><i>(insert original purpose level indicators)</i></p> <p>Completed survey and inventory; nos. of research publications; nos. of trained specialists; lab established; nos. of contributions to conservation plans and initiatives</p>	<p><i>(report impacts and achievements resulting from the project against purpose indicators – if any)</i></p> <p>First phase of survey and inventory work has been completed and second phase is being finished during Year 3. Greater numbers of research publications and trained personnel are accruing to the project than predicted. Laboratory has been established with a leveraged second facility under construction. Greater conservation impact has been achieved through securing UNESCO Biosphere Reserve status for the study area.</p>	<p><i>(report any lessons learned resulting from the project &amp; highlight key actions planned for next period)</i></p> <p>More material was collected than expected during the Year 1 expedition, which attracted more international collaboration and resulted in enhanced outputs but greater administrative load. Discoveries during Year 1 are re-focussing Phase 2 field work on un-explored drier regions of the study area in Year 3 of the project. Year 2 conservation training course re-scheduled to accommodate tourism practitioners wishing to study outside the visitor high season.</p>
<p><b>Outputs</b></p>			
<p><i>(insert original outputs – one per line)</i></p>	<p><i>(insert original output level indicators)</i></p>	<p><i>(report completed activities and outcomes that contribute toward outputs and indicators)</i></p>	<p><i>(report any lessons learned resulting from the project &amp; highlight key actions planning for next period)</i></p>

Knowledge of Fuegian bryophyte diversity significantly improved	Comprehensive inventory of Fuegian bryophyte species published	Species lists produced, taxonomic work progressing, and publications completed (see below)	Large volume of material has increased workload but allowed for more outputs than expected
Enhanced understanding of relationships and functioning of Fuegian bryophyte vegetation	Research papers on taxonomy, biogeography and ecology of Fuegian bryophytes produced	Several papers and publicity articles, and 3 books produced	Greater international collaboration has added to administrative load but is resulting in more publications accruing to the project.
Capacitation of local biologists for bryological survey, research and conservation.	Completion of 2-week course in bryophyte culture and conservation for 12 Chilean & Argentinean biologists.	Completed in Year 1	Additional bryo-culture training will be included in Year 3 at the time of the dry-region field work
Chilean conservation agencies and natural resource users influenced to protect bryophyte-rich habitat	Completion of 2x1-week courses for 24 Chilean conservation and forestry staff, and representatives of farming and tourism sectors (240 person-days)	1 day session of 2-day training seminar for 156 conservation, forestry, farming and tourism practitioners completed (156 person days). 1x9 day course for 16 practitioners (144 person days) due for completion June 2006. Total 300 person days of conservation training.	Chilean collaborators requested shorter courses for larger numbers of practitioners. The training schedule has been altered to accommodate this and is resulting in increased numbers of person-days accruing to the training component of the project
Local capacity for <i>in vitro</i> culture of endangered cryptogam species established	<i>In vitro</i> facilities established and functioning, and staff trained at UMAG/IP	Completed in Year 1. Facility fully functional in Year 2.	Due to funding multiplier effect and leverage, more extensive laboratory facilities than planned are being installed, with the final phase of construction taking place in Year 3 of the project
Conservation of Fuegian vegetation and habitats enhanced	Project inputs to Biodiversity Action Plan and regional development plan secured	UNESCO Biosphere Reserve status secured as part of regional development strategy. Project published outputs informing Biodiversity Action Plan.	A World Heritage Site proposal was originally envisaged by the project for a small part of the study area. Considerably greater conservation impact has been achieved through declaration of the wider study area as a UNESCO "Biosphere Reserve".

*Note: Please do NOT expand rows to include activities since their completion and outcomes should be reported under the column on progress and achievements at output and purpose levels.*



