

Darwin Initiative for the Survival of Species

Half Year Report (due 31 October each year)

Project Ref. No.	15/006
Project Title	Capacity Building for Temperate Rainforest Biodiversity Conservation in Chile
Country(ies)	Chile
UK Organisation	Macaulay Land Use Research Institute
Collaborator(s)	Fauna Australis, Parques para Chile, WildCRU, Rainforest Concern
Report date	31 October 2007
Report No. (HYR 1/2/3/4)	HYR 2
Project website	www.fauna-australis.puc.cl

1. Outline progress over the last 6 months (April – September) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up).

1.12. Project management meeting. Meetings between sub-groups have been on-going throughout the year. A management meeting involving Macaulay Institute, Fauna Australis and Parques para Chile was held at the visitor centre in February 2007 to evaluate progress and set the work agenda for the forthcoming year. Progress with tasks was apparently in line with the work plan, though, as was noted in the year 1 report, the mechanisms for management and financing of the Centre for Biodiversity were undergoing re-evaluation by Parques para Chile. Since then, Macaulay Institute has had several meetings on-site both with Parques para Chile (May, September and October) and with Fauna Australis (Monthly).

1.13. Financial and technical reports have been prepared and delivered to schedule.

1.5c. 2.1a,b,c. Wildlife monitoring by UK volunteers and Chilean research workers. Wildlife monitoring has been a constant and on-going activity for Nicolas Galvez, with support when necessary from the wildlife research team - Cristian Bonacic, Pia Bustos and Jerry Laker and UK volunteers (see below). The most important tool employed in this project has been the camera trapping programme. Since the last reporting period, this programme has expanded to include several new areas, as well as completing the second winter of sampling in Namoncay and La Barda study areas. The technique has been found to work much better in summer than in winter, and, during winter, at elevations less than 500m than above. Trap sites have been left non-functional for many reasons, such as being covered by snow, trees and branches falling, batteries freezing, and general equipment failure. In spite of the challenges, a considerable body of information is now available, which has enabled us to comment on activity patterns of native species (*Puma*, *Puma concolor*, *Guíña*, *Felis guigna*, fox, *Pseudalopex culpeus*, introduced species (wild boar, *Sus scrofa*) and feral dogs. The survey is providing important new information on the extent of interference of native fauna by feral dogs, and possibly wild boar. The research is also starting to build up a picture of seasonal changes in habitat use by pumas and the dwarf deer, pudu, that will underscore the importance for conservation of the lowland habitats peripheral to protected areas.

Snow cover has caused problems with the functioning of the camera traps, but also greatly facilitates the detection and identification of wildlife tracks and signs. Combining these sources of information is proving to be effective in establishing year-round monitoring of activity patterns at different altitudes of the key target species in this study. We are currently awaiting the imminent arrival of 15 more camera trap kits to strengthen the statistical validity of this study

and increase coverage of available habitats during the summer season, starting December.

Preliminary results of this work have been disseminated in the form of poster publications at the annual bi-national meeting of the Chilean and Argentine Ecological Societies (La Serena, September 2007), and the Oxford Felid Conference (September 2007). A talk on this work was presented at an inter-university seminar of the conservation research group, VILMOGEN (University of Concepcion) in June 2007. In addition, a talk/ slideshow was given in the Cafe del Centro by Nicolas Galvez to inform locally about the aims, objectives and results of the research. A "short communication" analysing the first camera trap results is being reviewed by the partners before presentation for publication in Oryx journal.

Recognising the limitations of camera traps to provide detailed information on spatial ecology of wide ranging wildlife, we are setting up the first study in Chile on pumas to use GPS collars. One collar and ancillary equipment has been bought with Darwin funding to test the practical feasibility of the system in the mountainous, densely forested conditions. The collar is on site, and we are awaiting final approval of our proposal to the relevant regulatory body (SAG, Ministry of Agriculture) to carry out the necessary trapping within our study area.

A significant part of the wildlife research requires official approval from government agencies. In addition to the trapping permit, Fauna Australis has signed collaboration agreements (*convenios*) for having access to the SAG wildlife management database, and with CONAF for access to undertake research within the National Park system.

The wildlife work was supported during April and May by two UK volunteers, Natan Levy and Kharis Wong. They stayed at the Centre for Biodiversity, working with Nicolas Galvez on the camera trapping programme, as well as a range of other activities, such as working the organic vegetable gardens. Another volunteer group from Cambridge University are coming out in December.

Parques para Chile and the Centre for Biodiversity are leading a study group of stakeholders in the publication of an expedient for UNESCO MAB in Paris for March 2008. The aim is to define major habitat types included in the extension of the Araucaria Biosphere Reserve (stakeholders including CONAF, CONADI, CONAMA, PPC, CORFO, individual indigenous communities). To contribute to this aim, in summer 2007, satellite images were obtained and classified by a student based at the Macaulay Institute to provide a map of major habitat types across the area. Spring and autumn ASTER satellite images were acquired for the study area (and surrounding areas), mosaiced and the spectral information was used, together with digital terrain-derived data (slope aspect and altitude) to classify the image into main vegetation types relevant for conservation. Both an unsupervised and a supervised approach were used, based on training points provided by Parques para Chile, to produce a digital vegetation map of the study area and surrounding area. The next step is to ground-truth the classification by visiting a set of sampling points across the area in the next couple of months. The data produced, in combination with existing and new (our Darwin project wildlife field work) information on wildlife habitat requirements and use, will aid the targeting of conservation planning and defining priorities for establishing protected areas that can adequately protect endemic fauna.

Quest Overseas (**response to referee query on year 1 report**) are still partners in our project, despite their unsuccessful attempts to bring volunteers across in year 1. We worked hard to replace this shortfall by active explorations for other organisations who could take this role – we had good success so far with Cambridge University who sent a volunteer team in year 1 and are sending their second team in December, plus a range of individual volunteers from different organisations. At the same time dialogue was kept up with Quest, and following a change in staffing at Quest (a new South America coordinator) and a visit to our project by one of their staff in September, we are now hopeful that groups will be forthcoming within the year – from discussion, the main problem seemed to be their lack of skilled leaders to bring groups (due to their short term 'employment' not attracting suitable people), so their new approach is now to employ each 'leader' for one year, who can then develop good skills and local links with the

projects in their 'region'. We are fully supportive of this new Venture and hope to have the first group this year. However, as a safety net we are continuing to actively engage with other organisations to ensure that we get continued volunteer work, whatever happens with Quest's new venture.

2.2. Two Chilean MSc research projects have been set up: Felipe Hernandez, from Fauna Australis is studying the population ecology and epidemiology of Guifia. An application for funding for this project has been made to CONAMA (Ministry of the Environment, £9,000). The proposal passed the preliminary filter, and we are awaiting results of the final selection. Leonardo Rios, Universidad de Chile, is undertaking a study on puma-livestock conflict resolution in the study area. This study is complementary to a PhD study being undertaken by Tucker Murphy of Oxford University, UK, which is comparing and contrasting puma management policy and practice in Chile and the United States. A further study on local attitudes to pumas and puma management is being undertaken by Parques para Chile, who have support from a CONAMA grant (£7000) under the "Environmental Protection Fund". This project began in August and will run for one year. Fauna Australis received £7,000 to develop a national action plan for carnivores and livestock resolution which is likely to increase up to £25,000 next year. A postdoctoral position funded by the German Agency DAAD for one year is starting October 2007 to study anti-predatory behaviour of native ungulates (£10,000). Fauna Australis is signing a collaboration agreement with a private protected area (Huilo Huilo) to conduct research on temperate rainforest 300 km south from the current study area to extend the relevance of this research. Also Senda Darwin and Fauna Australis are planning to collaborate and conduct coordinated research on endangered Darwin frog and Pudu in Chiloe island and Pucon, contributing to build local capacity for conservation science throughout the Valdivian forest ecoregion.

It is expected that these projects, leveraged with Darwin co-funding will greatly increase our ability to bring the information generated in this project to the local farming community in and around Pucon. The guina project is specifically organised with the local "neighbourhood councils" (Comite de pequenos agricultores) integrally involved in collating local knowledge on distribution and impacts of this wildcat, and in receiving instruction in appropriate forest management for this (and other) woodland species. This project brings in a local wildlife rescue centre as an associate. The collaboration will greatly increase our access to wildlife photography and other important resources relevant to dissemination.

A collaboration with the Imperial College UK MSc in Conservation Science has been established, which is anticipated to result in the commitment of one or two UK students to support this work during the 2007/2008 academic year. A talk is programmed at Imperial in March 2008.

2.3. Begin building work on field centre

The cafe for the field centre was complete and operating within the first reporting year of the Darwin project. A report from Parques para Chile outlining the business plan for the Centre for Biodiversity was requested in May, but has not been received to date (**note: this was also a query from the yr 1 report referee**). Informal conversations indicate that several options are being evaluated, involving support from a number of US corporations and foundations, though the final agreement to commit finances to construction has not yet been reached. The centre is, however, already equipped and prepared to receive approximately 20 students.

2.7. Strategy developed for Biosphere Reserve with stakeholder participation. Parques para Chile has been instrumental in establishing a committee of stakeholders for the establishment of the Araucarias Biosphere Reserve extension. This is being conducted with the participation of several relevant government agencies – CONAF (National Protected Areas), CONAMA (Environment), SERNATUR (Tourism), CORFO (Enterprise funds), as well as the municipalities and regional government involved. An executive has been established, and they are raising money to support the preparation of the application to UNESCO-MAB anticipated for March

2008, and an accompanying book on the natural history of the Araucaria Andina zone.

Rainforest Concern has now established a staff officer locally to support Darwin-related activities. Representing co-financing from this NGO partner, Charlie Watson is now based in Pucon for 6 months to develop publicity resources for the Biosphere Reserve campaign, as well as contribute to other activities, such as the field ecology.

2.4a,b. Weekend courses for environmental educators

The development of educational activities has diverged to an extent from that foreseen in the proposal, as follows. Instead of holding weekend courses, our scientist, Nicolas Galvez has taken other (previously unforeseen) opportunities: he has teamed up with a technical diploma course for mountain guides at the Catholic University campus in nearby Villarica and he is arranging the first lecture imminently. Nico has also led educational activities (two field trips and a lecture) in a new course on plant and animal observation and identification of birds and wildlife tracks (September, 2007) for tourism guides at ITUR (Universidad de la Frontera/ EU) in Pucon. Rodrigo Calcagni of Parques para Chile is now responsible for a new diploma in Sustainable Development at the Universidad Catolica de Temuco. These combined efforts in expanding environmental education through collaboration with local universities has absorbed available manpower to organise the originally envisaged weekend courses, but we are happy that the new directions will provide good, if not better, educational activities.

Clarification requested by year 1 report referee: The house visits in year 1 (replacing the originally planned workshops with *campesinos* on sustainable forest management as the project got under-way and the full needs of the project were fine-tuned) took information about the project to 6 main landowners (some of which have up to 30 families sharing these properties), resulting in good local dissemination and successful agreements to 'house' camera traps on all 6 properties, which was very important for the research part of our project and the integration of local people into what we are doing. The PhD project starting in December 07 will also include house visits (>200 houses). We believe that the combination of this house-based contact and the above educational work (previous paragraph) is best for the project as a whole and that it will provide similar (and additional) benefits to those envisaged from the originally planned *campesino* workshops.

2. Give details of any notable problems or unexpected developments that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

We have had a challenge to integrate the interests of the NGO and University partners during this period (all other cross-partner collaboration has, happily, been very good). The outputs, and thus the way of working, has proved to be quite different in nature. The process to establish the Centre for Biodiversity is by its nature a co-funding activity, and thus we have a limited influence in design and implementation. A promised business plan has not yet been forthcoming. We note that the Parques para Chile team has been stretched by commitment (successfully) to complete an important cartography contract (with Darwin co-funding), and some serious personal health problems. This may be a significant source of the frustration experienced by the other partners in unanswered emails, and undelivered documents. Personal assurances indicate that Parques para Chile are still hopeful to be able to secure financing for a GIS-orientated conservation centre within the time frame of the project. There is unlikely to be any impact on the project budget. **(Note: these sentences address two of the referee queries on the year 1 report – the business plan and the quality of collaboration between partners).**

Have any of these issues been discussed with the Darwin Secretariat and if so, have changes been made to the original agreement?

These issues have not yet been discussed with the Darwin Secretariat. The issue is seen as a potential problem, primarily affecting the management of co-financed activities. Solutions are currently being sought through a series of meetings between Macaulay Institute, and the local partners, before bringing this to the Darwin secretariat if we cannot find a good solution with minimal changes to the project workplan.

Discussed with the DI Secretariat: **no/, in..... (month/yr)**

Changes to the project schedule/workplan: **no/, in.....(month/yr)**

3. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

Expenditure on salaries was reduced as of April 2007 in line with the plan developed in Year 1, and according to the comments in the Annual report review.

The wildlife field guide planned within the co-financing activities has not yet been delivered by Parques para Chile. The team is discussing other ways of meeting this commitment.

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan or budget should not be discussed in this report but raised with the Darwin Secretariat directly.

Please send your **completed form by 31 October each year per email** to Stefanie Halfmann, Darwin Initiative M&E Programme, stefanie.halfmann@ed.ac.uk. The report should be between 1-2 pages maximum. **Please state your project reference number in the header of your email message.**