



Darwin Initiative Main/Post/D+ Project Half Year Report (due 31 October 2016)

Project Ref No	22-001
Project Title	Rescuing and restoring the native flora of Robinson Crusoe Island
Country(ies)/Territory(ies)	Chile
Lead Organisation	CABI
Partner(s)	CONAF, INIA, MMA, Oikonos
Project Leader	Steve Edgington
Report date and number (e.g., HYR3)	31 October 2016 HYR2
Project website/ Twitter/ Blog/ Instagram etc	To be confirmed
Funder (DFID/Defra)	Defra

1. Outline progress over the last 6 months (April – Sept) 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 to end September).

Highlights in the reporting period: new seed bank in place and operational; priority species planted in the RCI nursery; 18 plant leaflets produced; over 200 microorganisms found with potential plant-protection or growth-promotion activity; outputs presented at an international conference; ex-President of the World Federation for Culture Collections to facilitate an ABS/Nagoya workshop; agreement by Chile's National Seed Bank to conserve and curate RCI seeds and spores.

Specifics against the project timetable:

1.1 Adaptations to botanical garden to establish seed bank facility

The new RCI seed bank facility, built from a shipping container, was installed and fitted-out (see opposite figures). Doors, windows and a roof were added, with electricity, storage cabinets, sinks, lab equipment fitted internally. The bank is connected to an old RCI laboratory which itself has been renovated with new benches, sinks etc, to facilitate processing and germ testing of seeds. RCI seeds have been moved into the new bank. Whilst progress is behind original schedule the team do not consider delivery to be at risk.

Chile's National Seed Bank at Vicuña has agreed to house RCI seed material as a duplicate collection. This is tremendous news as it brings not only

significant culture preservation expertise to the project but provides a secure, long-term back-up bank for RCI material. In January 2017 project staff will meet at Vicuña for a symposium on Nagoya and access and benefit sharing. Present will be project partners, RCI reps, an FAO



rep, the ex-President of the World Federation for Culture Collections and CABI's Regional Director for Latin America.

1.2 Seeds and spores obtained from native forest and conserved in seed bank

Project staff collected seeds from 20 RCI plant species and stored them in the bank*. Staff also assessed seeds collected before the project and discarded any that were in poor condition and/or dead (of no surprise a high proportion were discarded as preservation standards prior to the project were poor). Leaflets were produced for 18 native species that contained details on distribution, seed conservation and propagation – opposite figure for example*

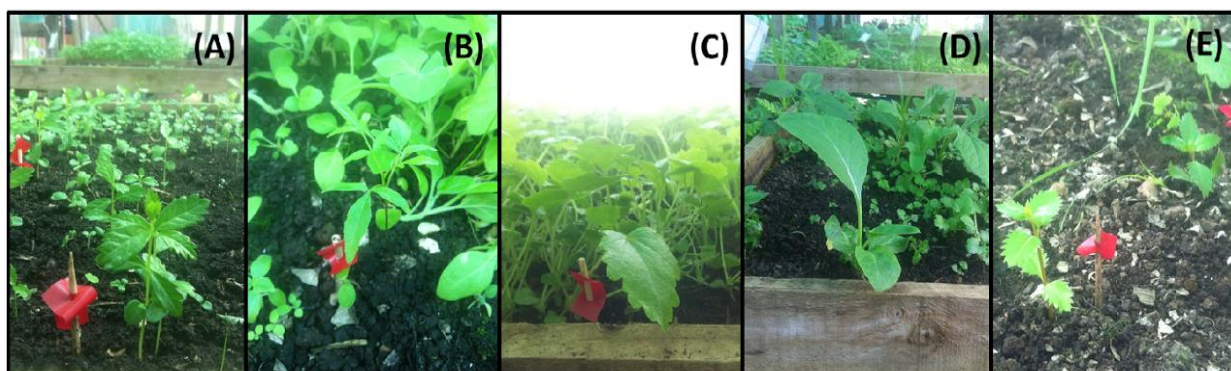
*accession records/leaflets available on request

2.1 Adaptations to expand nursery ground space

The team is prioritising the upgrade of facilities tailored for fern propagation as this will enable more rapid habitat restoration. A controlled propagation cabin has been purchased with the support of the Chilean Institute of Ecology and Biodiversity which will be a fern-specific facility. The cabin will be in place and operational by January 2017. For reference it will have ground coverage of approximately 20sqm.

2.3 Key native species prioritised and propagated

The project's priority species remain the same with the exception of *Gunnera tinctoria* which is replaced by *G. bracteata* as collecting seed from *G. tinctoria* will take longer than anticipated. All five (new) priority species are now growing in the nursery (see figures below). Nursery records show the following numbers: *Dendroseris litoralis* 321 (D), *Rhaphithamnus venustus* 257 (A), *G. bracteata* 105 (C), *Fagara mayu* 64 (B) and *Haloragis masatierrana* 15 (E).



4.2 Seedlings of five native plant species replanted in 1 ha of cleared land

Unfortunately the project lead has not had time to translate and summarise results regarding replanting activities. A report from the Chilean partners is attached as an appendix. The project lead will liaise with Darwin regarding the most appropriate time to submit a summary of this report. Replanting is underway but exact figures need detailing.

5.1 Determination of microbial constituents from native forest soils and associations with plant species

Sampling for microorganisms associated with native RCI plants was concluded in this reporting period. Approximately 95 root and soil samples were analysed (171 in whole project), with the following combined results: 145+ isolates of insect- and/or nematode-killing fungi, 50+ isolates of disease-inhibiting fungi, 150+ isolates of growth-promoting fungi and/or bacteria and 35 isolates of plant pathogens. **CONFIDENTIAL AND PLEASE DELETE: Two of the pathogens constitute new disease records for Chile.**

5.2 Production of selected microbes

The project has selected two RCI endemic plants (*D. litoralis* and *H. masatierrana*) and will test protectant and growth-promoting microorganisms associated with each. Using matched funding

Asara serrata Ruiz et Pavon Var fernandeziana. (Gay) Reiche.

Familia: Flacourtiaceae
Nombre Común: No tiene
Categoría: En Peligro Crítico, RCE 2010

Descripción: Variedad endémica de la Isla Robinson Crusoe (Marticorena et al. 1998). Corresponde a un árbol pequeño de hasta 10 m de alto, poco ramificado. Hojas perennes, pecioladas y de margen ligeramente aserrado. La especie presenta flores hermafroditas, axilares. El fruto es una baya redondeada, primario blanca cremosa y luego oscura con numerosas semillas (Rodríguez et al. 1983, Johnson 1996). Según Skottsberg 1982, la especie presenta una polinización por viento, dado que el estigma está localizado al mismo nivel que las antenas, esto podría indicar que existe autopolinización (Anderson et al. 2001).

Distribución: Se distribuye de Quebrada de Puerto Francés a Cerro Central; Quebrada Sal y Puentes y Quebrada Villagra (Johnson 1996; Skottsberg 1922, 1952; Ricci 1989). Se estima una extensión de la presencia de 20 km². Ricci (2006) contó 108 individuos de la especie en toda su área de distribución. Se observa poca regeneración natural, y siempre son pocos individuos solitarios (Skottsberg 1952).

Semillas: La germinación comienza a los 50 días de sembradas las semillas, obteniéndose un máximo de 20% de germinación a los 75 días (Ricci 1988); Cuevas & Figueroa (2006) en condiciones de laboratorio la germinación comienza más tarde (94 + 27 días) pero logra un 60% de germinación.

Vegetativa: La colecta de esquejes fue realizada en la administración durante los meses de marzo a

INIA have installed three controlled growth chambers for these tests.

Monitoring and evaluation, recording and dissemination

Results of the project were represented at the 3rd Chile Symposium of Biological Control (Aug 2016), in Chillan, Chile. There were approximately 200 delegates, representing USA, Europe, Australia and Latin America. For full programme see www.simposiocontrolbiologico.com. The project team is also producing a short film relating to project activities – the first edit was completed in September with the final edit due for early 2017.

2a. Give details of any notable problems or unexpected developments/lessons learnt 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.

CONFIDENTIAL AND PLEASE DELETE: The project manager visited Chile in October 2016 to investigate a recent breakdown in relationships between CONAF and the RCI municipal council. Both parties are key to project implementation, CONAF is responsible for managing Chile's national parks (of which RCI is one) and the municipal council has overall island jurisdiction. Fall-out has arisen over a biodiversity action plan submitted to UNESCO, the result of which is that CONAF no longer attend RCI community action meetings. The project lead anticipates this situation will be resolved without significant impact on the project timetable however it must be monitored.

2b. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS: Yes (whilst in Chile but gave few details)

Formal change request submitted: No

Received confirmation of change acceptance Yes/No

3a. Do you currently expect to have any significant (e.g., more than £5,000) underspend in your budget for this year?

Yes No Estimated underspend: £

3b. If yes, then you need to consider your project budget needs carefully.

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

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 can be discussed in this report but **should also** be raised with LTS International through a Change Request.

Please send your **completed report by email** to Eilidh Young at Darwin-Projects@ltsi.co.uk. The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g., Subject: 22-035 Darwin Half Year Report**