Darwin Initiative Annual Report 2007-2008

Darwin Project Information

Project Ref Number	640/15/015
Project Title	Tools and training for fern conservation and monitoring, El Salvador
Country(ies)	El Salvador
UK Contract Holder Institution	The Natural History Museum
UK Partner Institution(s)	none
Host country Partner Institution(s)	Jardin Botánico La Laguna, Ministerio del Ambiente y Recursos Naturales (MARN), SalvaNatura
Darwin Grant Value	£108,940
Start/End dates of Project	1 July 2006-31 June 2009
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1 April 2007-31 March 2008
Project Leader Name	Sandra Knapp
Project website	Not applicable
Author(s), date	S. Knapp, M. Peña-Chocarro, J. Monterrosa

1.   Project Background

This project builds upon two earlier successful Darwin Initiative projects undertaken with the Natural History Museum (NHM) and the Jardin Botánico La Laguna (LAGU) in El Salvador. The first of these (Empowering local people to mange the biodiversity of El Salvador, DI 162/8/150) developed taxonomic and managerial capacity by working with the biodiversity in shade coffee farms and publishing field guides to the trees, wasps and ferns of these agricultural habitats, and the second, a Darwin Scholarship, further developed the individual (J. Monterrosa) skills initiated in the shade coffee project. The current project arose through discussions held with personnel of LAGU and the Ministerio del Ambiente y Recursos Naturales (MARN) as to the suitability of ferns as a key non-vertebrate group to use in a nationwide monitoring scheme. In order to implement a monitoring scheme, a field guide to the ferns of El Salvador on a national level (rather than just those found in coffee farms) was deemed necessary. Ferns are already in the frame for conservation action, all tree ferns are controlled for export by MARN, and other taxa are known to be of conservation interest and are thought to be good habitat indicators. During the course of the work undertaken by Monterrosa in the DI scholarship, 19 new records of ferns were discovered for El Salvador, bring the total number of fern taxa in the country to 381 (see below for further additions to the fern diversity of the country!).

An integral part of the project planning was to use the funds (if any) generated from the sales of the fern field guide to support biodiversity related research by university students and other young people in El Salvador. The supposition that the guide will sell well is behind this objective – this is based on the popularity of previous field guides published in El Salvador from the coffee farm project, and the anticipated need for the guide on a regional basis. LAGU (a not-for-profit organisation) will manage this part of the project, and it will provide a lasting legacy.

2.   Project Partnerships

This entire project was developed in partnership by the participating institutions, particularly NHM, LAGU and MARN. SalvaNatura was invited to participate in the project, especially in the training courses and network activities, but was not involved in the overall project design. The partnership of the three core institutions has strengthened over the year, particularly due to the conservation network meetings held over the course of the year and to the training course held in June 2007. Weekly phone conversations between NHM and LAGU personnel reinforce and strengthen the sense of working as a team towards common goals.

Dr. Jorge Quezada Diaz, one of the key project partners, is the CBD focal point for El Salvador, so the project is in constant contact with the CBD focal point. He has recently been promoted to be head of natural resources, making his participation key to implementing the project as part of the national plans. Other MARN personnel who participated in the first network meeting are continuing to work with LAGU personnel, so the in-country participant links are strengthening as the project continues; during the recent training course a MARN staff member has been assigned to the project as a special responsibility, this will ensure long-term stability and cooperation.

3.   Project progress

3.1   Progress in carrying out project activities

During the reporting year we carried out all planned project activities. Collecting around the country intensified, and Jorge Monterrosa undertook 14 collecting trips where specimens and images were collected. During these activities two new genera for El Salvador were discovered and the number of new species for the country has risen to 25.

Life zone indicators were refined in line with the MARN national vegetation classification. This will ensure that the database when completed will be fully searchable and maximally useful.

The first training course was held for one week, partly at the Jardin Botánico La Laguna and with a field component at Parque Nacional El Imposible. The course was focused on people working in protected areas, and trainees represented all of the major (and some minor) protected areas in the country.

The conservation network met more times than planned; there is considerable enthusiasm for this activity, which brings together a group of people who share ethos and objectives, but due to time pressures, often do not meet. The network is proving a valuable focal point for these discussions. A core group of about 7 people has met more often, but the larger group (up to 20 participants) met twice during the year.

3.2   Progress towards Project Outputs

During the 14 collecting trips undertaken over the year, Monterrosa collected ca.500 fern specimens and has amassed images for 250 of the 393 species of Salvadorean ferns. Final decisions as to which groups will be treated as aggregates will be taken early in the next reporting period; we estimate that the image collection will be complete very soon.

Databasing work at NHM added some 200 new fern specimen records to the database.

Work on the field guide in this year concentrated on preparing species descriptions for all 393 fern species from El Salvador. All but 25 of these are completed and will be sent for peer-review and subsequent editing by the end of May, with final versions ready for the printers by September. A standard format was used and each description was prepared as it will appear in the guide. Some early descriptions were used in the training course to assess suitability for use in monitoring, changes suggested have been incorporated.

The first training course was held at the Jardin Botánico La Laguna and with a field component at Parque Nacional El Imposible; trainees were drawn from the protected areas community (list of participants attached as Annex 3). In the project proposal we suggested we would train 20 trainees per course, but logistically and practically we decided that this was too many for a maximally effective learning experience. Therefore we ran the course for 12 trainees, with more in-depth training provided. This was particularly important for this first training course in which the participants had little or no formal botanical background and so needed much one-on-one instruction. In our logframe we indicated we would train 24-40 people; we now think, in consultation with others in El Salvador, that the lower number of better trained people is the preferable option (see lessons learned).

The conservation network met three times (April 2007, July 2007, September 2007) with participation varying between 7 and 21 people. The core group of 7 participants have continued meeting on an informal basis to discuss biodiversity and monitoring policy; this activity is supported enthusiastically by MARN.

Please see the previous annual report for a discussion of the re-timing of the delivery of the monitoring framework to MARN.

NHM staff time spent in El Salvador has been less than anticipated or planned. This has in part been due to health related issues of staff, and to travel restrictions as a result. We hope to spend more time in-country during the last year of the project, but our constant communication with Jorge Monterrosa and Roberto Escobar has meant that this aspect of the work has not affected progress towards project outputs.

3.3 Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Total planned from application
Established codes							
5	Training for Salvadorean taxonomist (Monterrosa)	9 mos	1 yr				3 years total
6A	Number of people to receive training	1	12			13	24-40 (see logframe)
6B	Number of training weeks (yr 1: training in digital photography and content management; yr 2: training course in fern collection and identification)	1.5	12			13.5	24-40 (see logframe)

8	Number of person weeks by UK staff in host country	4 pw	4 pw			8	24 pw
9	Monitoring sheet format delivered to MARN						1
11A	Paper published in peer-reviewed journal						1
11B	Paper submitted for peer-reviewed publication		1				1
13A	Collections of ferns completed and at LAGU						1
13B	Determinations of ferns in LAGU completed and integrated into collection						1
14A	Number of seminars organised where project work disseminated	1				1	1
14B	Number of conferences etc. attended where work presented	1				1	2
15A	Number of national press releases	1	1			2	2
15B	Number of UK press releases						1
17A	Number of networks established	1					1
19A	Radio interviews in El Salvador						2
20	Estimated value of equipment left in El Salvador						£10K
21	Number of permanent facilities established						1
23	Value of resources raised from other sources						£70K
New - Project specific							

measures							
	Number of network meetings held	1	3				7
	Number of websites established and populated with project data						1

In Table 2, provide full details of all publications and material produced over the last year that can be publicly accessed, eg title, name of publisher, contact details, cost. Mark (*) all publications and other material that you have included with this report.

Table 2   Publications

Type * (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
*Training manual	Monterrosa, J. & M. Peña-Chocarro (2007) *Manual de técnicas de colecta e identificación de helechos*	Not formally published, but available from authors		Not for sale

3.4   Progress towards the project purpose and outcomes

We are making good initial progress towards the establishment of ferns as a useful monitor of biodiversity in El Salvador. We have assembled the tools, and have solid plans in place for future activities. The partnership is strong and is expanding; the fact that MARN has taken on the management of the conservation and monitoring network is especially welcome, as this will ensure its long-term stability and utility.

Our purpose level assumptions still hold, and our indicators are at the moment appropriate for the overall project purpose.

3.5   Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

It is difficult to see any measurable change in biodiversity, sustainable use or equitable sharing of biodiversity benefits as yet, but we feel that the enthusiasm with which the project and especially the training courses and monitoring network have been received augurs well for real impacts towards the end and after the project.

4.   Monitoring, evaluation and lessons

Our project monitoring arises largely through close partnership and interaction of all project partners. We have a plan for how and when outcomes will be achieved, and milestones along this pathway are assessed at regular intervals. We quantitatively assess progress towards providing baseline data and tools by measuring finely divided outputs that contribute to the whole (i.e. number of database records, number of photographs taken, number of taxa described and treated for field guide). Maria Peña-Chocarro and Jorge Monterrosa maintain a shared spreadsheet with which they monitor progress on field guide elements.

Lessons learned from this year's work are similar to those from any project involving close collaboration and interaction with another outside group not initially involved in the project planning. Specifically, this refers to the energetic and enthusiastic discussions we had in the first network meeting where plans for the framework for fern monitoring were modified so the project fit more closely to what others in-country were doing. This modification will be taken through the project, and we will closely monitor other potential changes to plans in order to make the project more fit-for-purpose in El Salvador. In this respect, we are fortunate to have MARN as a partner.

We have made what has been a profound decision about the training courses. In the initial proposal we had proposed training between 24 to 40 people in fern identification in order to leave a substantial body of people able to undertake monitoring after the project ends. However, in designing the training courses for maximum impact we collectively took the decision to train fewer people in more depth in order than they not only would be able to use the new knowledge, but be empowered to train others using the tools produced for the courses. This has allowed us to do substantial one-to-one training during the first training course with extremely good effect. Trainees from that course are continuing to interact with Jorge Monterrosa and sharing with him their new discoveries for their protected areas – this has been possible because the training was in depth and extremely personal.

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

We have thought carefully about our strategy for assessing indicator species, in light of the reviewer comments. Initially, we had a relatively diffuse set of habitat types defined, but have decided to use the nationally agreed MARN vegetation classification in order to focus indicator species more towards national goals. In order to do this, we have collated all database records for particular fern species, geo-referenced these and mapped them onto the MARN vegetation map. In this way we can see which taxa are truly confined to particular habitat types – two examples are *Anemia guatemalensis*, completely confined to pine forest, and *Alsophila salvinii*, a tree-fern confined to cloud forests above 1500 m (a very restricted habitat in El Salvador). By refining this indicator strategy we feel we will be able to construct habitat-specific monitoring frameworks – we will be discussing this with MARN during the next training course.

Publicity will be targeted to the publication of the field guide in January 2009 in order to maximize impact as detailed above and below.

6. Other comments on progress not covered elsewhere

We have made good progress in data collection for the project, and have close and productive working arrangements within the group, despite having spent less time in-country than originally planned.

7. Sustainability

The project is relatively high profile within the conservation and scientific community in El Salvador, but not with the public at large. We will try to increase our efforts to public understanding during the next year, in conjunction with the training course and the publication of the field guide, which will have more public appeal than workshops or planning meetings.

8. Dissemination

One short article for the press was prepared during the training course; this was not taken up by the national newspapers. In future we will release information about key project activities through the Ministry (MARN) in order to maximise impact; the major, most publicity-worth, key

event will be the publication of the field guide in early January. We are planning to have the Minister for the Environment involved in the guide launch (an election in El Salvador will take place in March so this will be ideal). Our next major activity is the second training course, which is an ideal event with which to publicize ferns in El Salvador through interactions at the Jardín Botánico La Laguna.

9. Project Expenditure

Table 3 Project expenditure <u>during the reporting period</u> (Defra Financial Year 01 April to 31 March)

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

From the remaining balance it was agreed that £2,578 could be carried forward into the 'others' allocation for 2008/09 to cover expenses incurred during a workshop that was to be held at the end of March 2008.

10. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

I agree for ECTF and the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here)

El Salvador is a small country in Central America, whose high population and extensive habitat alteration are often taken to indicate that it is low in biodiversity in the region. It is also often assumed that the country is well-known and that little new plant diversity is left to discover. Work during the course of the project has shown that this is certainly not the case. Whilst collecting ferns and fern allies to document distributions and to produce images for a field guide to these groups in the country, Jorge Monterrosa has discovered 2 genera new for the flora of El Salvador and 25 new species distributional records for the country. All of these are known from adjacent Central American states, but his hard work has shown that even in areas where diversity is thought to be well-known, new discoveries are waiting to be made.

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2007/08

Project summary	Measurable Indicators	Progress and Achievements April 2006 - March 2007	Actions required/planned for next period
Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve *The conservation of biological diversity,* *The sustainable use of its components, and* *The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources*			*(do not fill not applicable)*
Purpose: Provide the training, tools and baseline data necessary for the establishment of a biodiversity monitoring programme for ferns in El Salvador.	1. Framework for the monitoring of fern diversity in place by project end. 2. Capacity for monitoring of fern diversity in place by project end 3. Capacity for non-specialists to identify fern species in place. 4. Ferns species to serve as indicators of lifezone and habitat change selected and incorporated into monitoring framework. 5. Up-to-date baseline fern inventory data available to the National Biodiversity Inventory and National Report.	Conservation network meetings have been well-attended and will meet regularly in future, MARN personnel will take the lead for this part of project, ensuring integration into national biodiversity strategy goals; manual for training courses completed; first training course held; field guide contents nearly completed; inventory accepted for publication in a peer-reviewed journal.	Second training course to be held in next reporting period; another one or two network meetings; field guide to be designed and printed; website to be implemented at MARN; collecting to continue only until July 2008; publicity for the publication of the field guide will need to be carefully coordinated and managed in order to achieve maximum impact for the DI and for the project.

Output 1. Monitoring manual and framework developed for other taxa	Manual and framework delivered to MARN; included in National Inventory Strategy	MARN already has a manual for the monitoring of vertebrate taxa (birds and mammals), so the utility of having another different manual for plants was discussed and plans made to integrate the two formats; inclusion in the National Inventory strategy will depend upon its revision by MARN as it has just been published.
Activity 1.1 Conservation network meeting held at LAGU to discuss integration of fern monitoring		Monitoring framework design and delivery to be delayed to project end in order to better integrate with MARN
Output 2. Training courses for non-specialists in fern monitoring and identification	24-40 non-specialists trained	Course for 2008 planned to be held at very beginning of next reporting period, will be targeted at those with some botanical training or interest and have the potential and enthusiasm to train others.
Activity 2.1 First training course in fern identification and collection held at LAGU and in PN El Imposible		12 trainees for one week; trainees were mostly park guards and natural resource managers from protected areas.
Output 3. Biological collections made and used to strengthen national taxonomic capacity	Duplicate sets collections deposited nationally and internationally	Collecting programme continued with visits to various key areas for fern diversity.
Activity 3.1 Collecting undertaken throughout the reporting period (14 trips to various parts of the country)		Collecting has both entailed trips to places not previously visited and regions where species are known to occur; much of the collecting is focused around obtaining images for the field guide
Output 4. Database of ferns of El Salvador	Database handed over to MARN at project end.	Good progress made against this output indicator; database will be hosted on-line by MARN at project end.
Activity 4.1 Assessment of BM fern collections; databasing begun		BM collections in process of being databased; integrated with other datasets.
Output 5. Updated inventory with	Inventory published in hard copy	See Output 4 (MARN hosting of inventory post-project).

indicator species and preliminary conservation assessments	and online.	
Activity 5.1 Inventory accepted for publication (follow-on from Darwin Scholarship project)		Jorge Monterrosa has completed the initial scientific paper with an inventory of El Salvadorean ferns (begun during his Darwin Scholarship), and taking into account the work of the current project 2 new genera and 25 new species records for El Salvador have been discovered.
Activity 5.2 Indicator species identified for broad scale habitats in El Salvador		Indicator species identified for habitats as defined by MARN national vegetation classification.
Output 6. Field guide to the ferns of El Salvador	2000 copies of the field guide printed.	Field guide format and design planned and agreed upon; data collection begun (photographs and localities).
Activity 6.1 Descriptions written for all fern species from El Salvador		Descriptions completed for 376 of 393 species of Salvadorean ferns; peer-review, editing and correction begun.
Activity 6.2 Produce photographs, line drawings and other illustrative material for the guide		Photographs taken for ca. 250 species (of 393); some of this is due to our decision to lump extremely difficult species into single exemplar categories.
Output 7. Conservation work supported by sales of field guide	University student projects to be partially supported by sales.	Not relevant in this reporting period.
Activity 7.1 none undertaken this reporting period		
Output 8. Network of national specialists, relevant NGOs and GOs	Network will have met at least 3 times; partners confirm intention to continue.	Network received enthusiastically, will reinforce MARN's plans; network meetings held in LAGU on two levels.
Activity 8.1 Conservation network meetings held in LAGU		Three meetings of conservation network held at LAGU.

Activity 8.2 Core network group established		Seven of the 20+ participants decided to meet on a more regular basis to discuss broader biodiversity issues at regional and national levels.
Output 9. Public awareness of plant (fern) diversity in El Salvador raised	Articles in the press, radio interviews, public lectures	This is a long term output – we will begin to work on this when the field guide is published and monitoring can begin; no specific major activities carried out this reporting period.
Activity 9.1 Press release about project while NHM staff in El Salvador		Project summary sent to papers, little take up; plans laid for new strategy for dissemination in conjunction with field guide publication.

Annex 2   Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal:			
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 the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources			
Purpose Provide the training, tools and baseline data necessary for the establishment of a biodiversity monitoring programme for ferns in El Salvador.	1. Framework for the monitoring of fern diversity in place by project end. 2. Capacity for monitoring of fern diversity in place by project end 3. Capacity for non-specialists to identify fern species in place. 4. Ferns species to serve as indicators of lifezone and habitat change selected and incorporated into monitoring framework. 5. Up-to-date baseline	1. Monitoring assessment forms and database available through MARN. 2. A user-friendly field guide to the ferns of El Salvador published. 3. List of trained non-specialist provided in project reports. 4. Indicators of disturbance and key life zones identified in field guide, national report and project reports. 5. Monitoring ferns identified as key activity in National Inventory	Ferns represent a pragmatic choice of indicator organism in Central America. El Salvador retains taxonomic capacity for ferns resulting from previous Darwin awards. Developing a monitoring framework and capacity for ferns will act as a catalyst to the inventory of other groups. Capacity and tools for non-specialists generated in El Salvador will be important at regional level. MARN will undertake to develop a monitoring programme as stated in the National Biodiversity and National Inventory and Monitoring Strategies.

	fern inventory data available to the National Biodiversity Inventory and National Report.	Strategy; fern data and monitoring referenced in El Salvador's National Report to the CBD.	
Outputs			
Monitoring manual and framework; framework developed for other taxa.	Manual and framework delivered to MARN; included in National Inventory Strategy	Copy of manual and framework included in project final report.	MARN supports inventory as part of strategic activities; will use monitoring framework for other groups of plants and animals.
2 x training courses for 12-20 non-specialists in fern monitoring and identification.	24-40 non-specialists trained.	Individuals trained and their job titles to Darwin.	Training seen as essential to national strategy implementation; staff released; training using ferns is transferable.
Biological collections made and used to strengthen taxonomic capacity.	Duplicate sets collections deposited nationally and internationally.	Specimens collected cited in taxonomic works; duplicates distributed.	Current collecting regulations remain in place; collecting remains safe.
Database of ferns of El Salvador.	Database handed over to MARN at project end.	Copy of database sent to Darwin.	National Inventory and Monitoring Strategy requirements remain lifezone and species oriented.
Updated inventory with indicator species & preliminary conservation assessments.	Inventory published in hard copy and online.	Inventory included in field guide and published in peer-reviewed journal.	Indicator species identifiable from data collected; existing lifezone classification recognised.
Field guide to the ferns of El Salvador.	2000 copies of the field guide printed.	Copies supplied to DI and British Library.	Agreement reached; partners able to design guide.
Conservation work supported by sales of	University student projects to be partially	Darwin recognised in theses; candidates	Sales of the field guides will be strong; students interested in participating.

field guide.	supported by sales.	detailed to Darwin.	
Network of national specialist, relevant NGOs and GOs.	Network will have met at least 3 times; partners confirm intention to continue.	Participants and minutes of meetings sent to Darwin; joint expression of intent signed.	GOs & NGOs continue to work together to support national biodiversity inventory.
Public awareness of plant (fern) diversity of El Salvador raised.	Articles in the press, radio interviews, public lectures.	Copies to be included in project reports, web site interest monitored.	Salvadoran media will express strong interest.
Activities	Activity Milestones		Assumptions
Annotated database of ES ferns.	**Yr 1**. Inventory of fern collections nationally and internationally (Honduras); database; DI Fellow to visit Chicago (10/2006); **Yrs 2-4**. Updating of database.		Herbaria selected hold key collections.
Targeted plant collecting programme in-country.	**Yrs 1-4**. Collecting programme throughout El Salvador, targeting protected areas and fragments of natural vegetation (7/2008); all fern collections made as part of project labelled and distributed (9/2008).		All species found; permits remain in force; logistical support provided by MARN.
Lifezone indicators; preliminary conservation assessments.	**Yr 1**. Lifezone indicators selected using ecological data from database (11/2006). **Yr 3**. Preliminary conservation assessment for all Salvadoran ferns (12/2008).		Existing lifezone classification remains valid; indicator species identifiable; assessment possible.
Network establishment and strengthening..	**Yr 1**. Establishment of a group with government, NGO and academic representatives. (12/2006). **Yrs 2-4**. Group meets on a regular basis and with NHM staff when they are in-country.		Groups will agree; work together to implement BAP; commit to a future arrangement.
Monitoring format sheets for BAP.	**Yr 1**. Monitoring format for non-specialist use produced and agreed with MARN (12/2006)..		MARN support for monitoring continues.

Training in identification and monitoring	**Yr 2**. First training course for non-specialists in monitoring (6/2007). **Yr 3**. Second training course in identification and monitoring using draft guide (4/2008).	MARN sees training as essential to BAP implementation; staff released; training using ferns is relevant for other plant groups
Production of fern identification guide.	**Yr 1**. Workshop to agree design and layout; consultation with user groups (1/2007). **Yr 1-2**. Produce line drawings, amass images, prepare identification keys and descriptions (10/2008). **Yr 3**. Print 2000 copies of the guide (12/2008).	Agreement reached; participants enthusiastic; illustrators and printers still available; work proceeds on time.
Competition for student project on conservation.	**Yr 4**. Select first student project. (4/2009).	Students willing to participate; theses part of degree course.
Promote awareness of ES plant diversity.	**Yrs 1-4**. Press releases, public and university lectures. **Yr 4**. Public invited to final project workshop at La Laguna (5/2009).	Media coverage broad and noted by public.

Annex 3 Participant list for first training course "Colecta e identificación de helechos" June 2007

Dagoberto Rodríguez Delcid (herbario LAGU)

Mateo Andrés Hernández (Guardarecursos del P. N. Los Volcanes)

Eliberto Sandoval Martínez (Guardarecursos del P. N. El Imposible)

Ever Antonio Torres (Guardarecursos del A. N. P. Normandía)

Gloria Nohemy López (biólogo del P. N. Montecristo)

Jacinto Martínez (guardarecursos del P. N. Los Volcanes)

Jennifer Cambara Zuniga (estudiante de biología UES)

Jorge Ramos Barahona (estudiante de biología UES Occidente)

José Tobías Guevara (jefe del A. N. P. Río Sapo)

Juan Montes Manzanares (Guardarecursos del A. N. P. Santa Rita)

Salvador Misael Carrillo (Guardarecursos del A. N. P. Montaña de Cinquera)

Jenny Menjivar Cruz (herbario MHES)

Checklist for submission

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Is the report less than 5MB? If so, please email to Darwin-Projects@ectf-ed.org.uk putting the project number in the Subject line.	yes
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Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	yes
Have you completed the Project Expenditure table?	yes
Do not include claim forms or communications for Defra with this report.	OK