



***Developing a sustainable network for
primates in Ecuador (PRIMENET)***

Annual Report (Year 1)

Project number 14-040

Dr Mika Peck (PI)

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Darwin Project Information

Project Ref. Number	14-040
Project Title	<i>Developing a sustainable network for primates in Ecuador (PRIMENET)</i>
Country(ies)	<i>Ecuador</i>
UK Contractor	<i>The University of Sussex</i>
Partner Organisation(s)	<i>CORE PARTNERS: Ecuador Terra Incognita, QNCE (National Herbarium of Ecuador – administered by Corporación Botánica Ecuadendron) , Los Cedros Biological Reserve</i>
Darwin Grant Value	<i>£236 270</i>
Start/End dates	<i>June 2005 – May 2008</i>
Reporting period	<i>June 2005 to 31 March 2006 (Annual report number 1)</i>
Project website	<i>www.primenet.org.uk</i>
Author(s), date	<i>Dr Mika Peck, Diego Tirira, Ana Mariscal (15th April 2006)</i>

Project Background

The PRIMENET project aims to develop a comprehensive strategy for conservation of the critically endangered brown-headed spider monkey (*Ateles fusciceps*) other vulnerable primates (i.e. black mantled howler, *Alouatta palliata*, white-throated capuchin, *Cebus capucinus*) and their remaining habitat in the Chocó-Darién-Western Ecuador global biodiversity hotspot.

Habitat loss and hunting have reduced the spider monkey population to an estimated 50 breeding pairs with surviving populations being restricted to reserves (Reserve Etnologica Awa, Reserve Ecologica Cotacachi-Cayapas and the Los Cedros Biological Reserve).

PRIMENET aims to investigate and address the causes of population decline through a programme of research, community level monitoring and sustainable livelihoods.

Project Purpose and Outputs

Purpose – To develop a comprehensive strategy for the critically endangered brown-headed spider monkey (*Ateles fusciceps*), vulnerable primates and habitats in NW Ecuador based on a programme of research, monitoring, education and sustainable livelihoods within local communities.

Outputs

- Establish a network to monitor primate status and habitat using participatory field surveys and trained village-level parabiologists.
- Establish a GIS database at the Los Cedros Biological Reserve to record primate and habitat information from the buffer zone of the Cotacachi-Cayapas Ecological Reserve.

- Initiate and disseminate a public awareness campaign focusing on primate and habitat conservation.
- Train two Ecuadorian partners to masters degree level
 - MSc Botany – Universidad San Francisco de Quito
 - MA in Participation development and Social Change – Institute of Development Studies UK).
- Establish a training centre for parabiologists and local staff at the Los Cedros Biological reserve.
- Train parabiologists as certified primate and habitat ecologists.
- Identify sustainable livelihood options with local communities and partner organisations.

There have been no major changes to the proposed operational plan for year one. A minor alteration has been a rescheduling of the training of Ecuadorian partners (MSc/MA training).

- MSc in Botany - commenced earlier than scheduled, September 2005
- MA in Participation and Social Change rescheduled to year 3

All changes have been discussed with and approved by the Darwin Initiative Secretariat.

Progress

The PRIMENET project commenced in June 2005 and work over the first 10 months has progressed in line with the baseline timetable and logical framework. The achievements of the PRIMENET project are summarised by network partner, with additional outputs and activities highlighted by an asterisk.

Remote sensing & GIS database (University of Sussex)

Aerial photographs, LANDSAT remote sensing imagery, STRM elevation data and maps of the Cotacachi-Cayapas Ecological Reserve have been georeferenced in a GIS database. Unsupervised and supervised classification of LANDSAT images (using IMAGINE software) has focused on initially developing a baseline template of forest cover for 2001 within a 15 km buffer zone of the Cotacachi-Cayapas Ecological Reserve.

*An undergraduate BSc student (University of Sussex) is undertaking a final year thesis project to investigate land use change in the buffer zone of the Cotacachi-Cayapas Ecological Reserve over the years 1980 to 2001 using supervised and unsupervised classification of LANDSAT remote sensing imagery.

Habitat Survey (Corporacion Botanica Ecuadendron)

Reconnaissance field trip (July 2005) – General plant collection at Los Cedros Biological reserve over altitudinal range of 1200 – 2400m. Plants sorted and identified with help from taxonomists from the Missouri Botanical Gardens.

Field work (August/September/December 2005) – Habitat assessment of mature forest and regenerating forest (12 – 18 years old). Four mature forest sites and four regenerating forest sites were sampled using stratified quarter-point sampling.

*A permanent one hectare plot was established at the Los Cedros Biological Reserve. This is a collaborative project with the Missouri Botanical Garden to study forest remnants of the Western Andes. Ongoing monitoring of hectare plot to investigate phenology.

Preliminary laboratory work (October/November 2005) – Sample drying, identification and updating to database.

Primate survey, environmental education and parabiologists training (Ecuador Terra Incognita)

Environmental Education and parabiologists training – The objectives were to

- Identify institutions working in the region of interest
- Collect existing information from institutions identified
- Interview key personnel involved in projects within the buffer zone
- Identify community members for parabiologist training for the second phase of the project

Five key institutions were identified as working within our focal region – Fundacion Ecociencia, Fundacion Altropico, Fundacion Zoobreviven, Conservation International, and the Ministry of Environment. Reports from previous projects in the region were collated (Table 4 appendix 2). From interviews with personnel involved in projects within and surrounding the Cotacachi–Cayapas Ecological Reserve, community members recommended for parabiologist training were identified (Tables 2,3 in appendix 2). In addition, a collaborative educational programme is under discussion with Fundacion Altropico - experts in community environmental education.

A detailed report of this phase of the work is provided in appendix 2.

Development of educational material – A PRIMENET special edition of the magazine 'Ecuador terra Incognita' was published in March 2005 (Appendix 3). 26000 copies were printed and 22 000 distributed throughout the country to over 60 cities and towns. 4000 copies will be freely distributed to communities within the project's focus. The edition contained articles focusing on the communities and biodiversity of the region. It contained the following articles: Last of the spider monkeys (Diego Tirira), Biogeography of the Chocó (Carlos Boada), Conservation of the Los Cedros protected forest (Josef DeCoux), A Chachi marriage (Isabel Sabina), The Marimba, spirit of the people of Esmeraldas (Karina Paredes & Ivan Kashinsky), The Toisan Cordilleira and international mining (Carlos Zorilla). In addition a summary of the PRIMENET project is included with preliminary notes from the field survey of primates in the Los Cedros Reserve.

Posters – 5000 posters are being printed for free distribution to communities, schools and villages in the project zones (Complete April 06)

T Shirts – 300 T shirts have been printed for free distribution to project collaborators, especially those involved as parabiologists and assistants in environmental education courses (Complete April 06)

Fieldwork – In the first year primate field surveys were undertaken for 2 weeks of every month within the Los Cedros Biological Reserve confirming the presence of populations of *A. fusciceps*, *A. palliata* and *C. capucinus*. The data is currently under analysis and a final report is due to be completed by June 2006.

First Aid Course – Wilderness first aid course ran in September 2005, facilitated by the Red Cross (Quito). Participants included reserve staff, and primate survey and botanical teams.

Difficulties

Initial plans to fund the Ecuadorian network partners through a single governmental organisation, the Ecuadorian Museum of Natural Sciences, were altered due to inter-institutional conflicts. It was decided to provide greater autonomy to network partners and directly fund our core network partners. This unfortunately resulted in the

withdrawal of the Ecuadorian Museum of Natural Sciences as a network member, however it should be noted that the project is under management of the same host country team leaders that developed the project in collaboration with the University of Sussex. There has been no impact to budget or timelines – the decision has resulted in reduced bureaucracy and increased dynamism and links to local governmental and national government organisations remain strong. We still hope that the Museum will return as a network partner in the future.

Project enhancement

Preliminary analysis of remote imagery for the GIS database has highlighted the following problems associated with remote sensing in Andean mountain environments

- Poor resolution of imagery - Remote sensing from satellites and aircraft is limited in terms of its ability to resolve forest type, due primarily to the spatial resolution of available remote sensing imagery (Landsat TM data has a spatial resolution of roughly 30m) and aerial photographs (1:60 000 scale)
- Cloud cover - frequent and dense cloud cover associated with cloud forest renders much satellite imagery and aerial photography incomplete and hard to use even for gross habitat assessment.

Large scale aerial photographs have recently shown great promise in key tree species identification. There is currently no imagery of the required scale available and the dangers of flying at low altitude in mountain regions, and the need to obtain images within small time windows of cloudless conditions makes conventional aircraft based image acquisition difficult and expensive. We propose to use a low-cost tethered helium balloon platform to capture digital images from above the forest canopy to sample habitat types. Using the inventoried one hectare plot, the ability of an 'aerial taxonomic key' to identify species and species groups from crown structure will be assessed for its' ability to :

- Identify keystone primate resource tree species - to provide a metric of forest quality and primate carrying capacity
- Serve as a rapid habitat assessment method – enabling large areas to be analysed to provide an integrated metric of habitat structure and quality.

The large scale aerial photographs will be georeferenced and used, in turn, to carry out a more accurate supervised classification of recent LANDSAT imagery for the whole area of study. The development of site-specific aerial taxonomy keys will be critical to forest monitoring studies once higher resolution satellite imagery is developed and comes online for use by conservationists (Such imagery is still of too low resolution to define crown structure, i.e. 1m using IKONOS and Quickbird).

Work plan for the next 6 month period

In line with the original project proposal, the following schedule covers the next reporting period (April 2006 – September 2006).

In addition to ongoing field and laboratory work:

April: Publication and dissemination of posters and T-Shirts

May –June: UK PI to chair workshop 'Training parabiologists – methodological review and curriculum development' at the Los Cedros Biological Reserve

May – July: UK team and botanists to capture and calibrate helium balloon remote sensing imagery to develop 'aerial taxonomy' keys

August: development of modular parabiologists training course

September: First parabiologist training course [2 weeks]

Year 2 - First reporting period workplan						
Project month	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16
	April	May	June	July	August	September
Remote Sensing (UK)	GIS database development	Remote sensing protocols developed	WORKSHOP - Los Cedros Biological Reserve	Fieldwork (Remote sensing - collection & calibration of large scale helium ballon platform imagery)	Delivery of of modular Parabiologist training course	PARABIOLOGIST TRAINING COURSE
Habitat Survey (Herbarium)	Identification of samples		WORKSHOP - Los Cedros Biological Reserve	Fieldwork		
Primate survey (Terra Incognita)	Field survey and data analysis		WORKSHOP - Los Cedros Biological Reserve	Visit communities (Southern buffer) recruit parabiologists		

Figure 1: Timelines summarising work plan for period April 2006 – September 2006

Partnerships

To date the working relationships and communication between partners has worked well. Regular meetings between Ecuadorian partners and communication via the internet discussion group have proven ideal in resolving any logistical and scientific issues that have arisen.

Collaborations with other institutions and projects

UK Network

University of Oxford-Brookes – The PRIMENET project has made direct links with the MSc in Primate Conservation. This has resulted in 4 MSc students registering to undertake their final thesis projects at the Los Cedros Biological reserve from May – 2006 – September 2006. The following research projects will be carried out under supervision of PRIMENET staff.

- 1) Field survey of the brown-headed spider monkey (*Ateles fusciceps*) using the DISTANCE method (£750 grant awarded by the Primate Society of Great Britain),
- 2) Feasibility of a population reinforcement programme for *Ateles fusciceps* at the Los Cedros Biological Reserve – aerial taxonomy and assessment of carrying capacity.
- 3) Establishment of a community-based restoration reforestation project
- 4) Census of the mantled howler monkey (*Alouatta palliata*) in the Los Cedros Biological reserve - triangulation of vocalisations.

University of Wales - MSc Environmental Forestry project "The influence of *Cecropia* species on succession in the Los Cedros Reserve Ecuador"

Holly Hills Trust (UK) – contributed £2000 to the project to support student research projects.

Rainforest Concern (UK) – working in liaison with the Holly Hills Trust they are interested in consolidating protection of primary forest in conjunction with Los Cedros Staff. In June 2006 a meeting has been organised between reserve staff and their representative.

International

Missouri Botanical Gardens (USA) – Incorporation of a permanent 1 hectare inventoried plot at the Los Cedros Biological Reserve into the 'Forest remnants of the Ecuadorian Pacific Coast' Project.

Ecuadorian

Our Ecuadorian partnerships (Fundacion Ecociencia, Fundacion Altropico, Fundacion Zoobreviven, Conservation International) have been further strengthened and widened by the work carried out by the environmental education team (Terra Incognita) as outlined above in the section on progress and detailed in their report (Appendix 2)

The botanical team contributed to two local guide training programmes at the Los Cedros Biological Reserve (total 30 people).

Impact and Sustainability

The profile of the project was raised nationally by publication of a special issue of 'Ecuador Terra Incognita' (Appendix 3) in March 2006 resulting in an increased awareness of the status of the Brown-headed spider monkey and the region. This is reflected in the number of Ecuadorians who have contacted us and are interested in carrying out volunteer work. The critical target audiences are, however, the communities within the buffer zones of the protected areas. There is a great deal of awareness of the project and the conservation issues within the region surrounding the Los Cedros Reserve – due principally to strong community links maintained by reserve staff. Other communities within the buffer zone of Cotocachi-Cayapas Ecological Reserve are the focus of the second phase of the project.

In the UK the PI has given a number of seminars to highlight the project (Oxford-Brookes University, DICE, University of Sussex) and the project was featured in the Guardian newspaper [Education Guardian Tuesday 06.12.05 p12]

These dissemination activities have generated Ecuadorian and UK-based interest resulting in increased numbers of volunteers applying to work with PRIMENET research at the Los Cedros Biological Reserve. This provides the income stream necessary to maintain the reserve and its staff.

Interest in volunteering for primate monitoring at the reserve, by both Ecuadorians and British students and tourists, should enable the monitoring programme within the reserve to become self sustaining in the long-term.

Financial support from the UK for ongoing parabiologist training, beyond the project lifetime, is confirmed from Reserve-Life-Support Ltd. Other conservation organisations are now also showing interest in the project and may also provide financial support. This encouraging start will be built on over the next two years of the project. With the leverage associated with the Darwin Initiative we are currently mounting a proposal to bid for funding from Earthwatch as the project clearly fits their remit and would ensure future support of the reserve.

Outputs, Outcomes and Dissemination

All key milestones outlined in the project implementation timetable have been achieved.

Publication of a special issue of Ecuador Terra Incognita – devoted to issues surrounding the primates, habitats and communities of the Ecuadorian Choco biodiversity hotspot was realised earlier than planned (March 2006 instead of June 2006).

Collaboration between PRIMENET and Missouri Botanical Gardens has added value to the forest inventory programme at the Los Cedros Biological Reserve. Resulting in the collection of over 2700 plant specimens to date we aim to identifying to species level and provide a field guide of the plants of Los Cedros.

The sites sampled included primary forest and regenerating secondary forest. This research will provide information on botanical diversity and the process of succession to guide forest restoration projects and the development of rapid habitat assessment methods. A draft report of findings is scheduled for October 2006.

The press releases within Ecuador have not resulted in a national radio item to date.

Dissemination

Dissemination activities form an integral component of the project and have been described in detail above (Section 4). In year 2 the focus is on dissemination at the community level in the Southern Buffer zone of the Cotacachi-Cayapas Ecological Reserve.

Upon project termination, dissemination at the national and local level will be maintained through articles published by PRIMENET network members in the journal published by Ecuador Terra Incognita (appendix 3).

The training and links to community level parabiologists, established during the project, will provide the future conduit of capacity building and information to, and from, buffer zone communities. This will be facilitated by the Darwin Primate Research centre established at the Los Cedros Biological Reserve.

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
5	Appointed DI Ecuadorian Staff	4				
8	UK PI attends project setup	1				
15A	Press release (June 05).	2				
	*Major press release (Mar 06)					
15C	Press release UK (Guardian)	1				
15D	Local Press release UK	1				
17A	Internet presence & discussion group	1				
23	'In kind contributions' £49991	1				

** Output achieved earlier than timetabled*

Table 2: Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (e.g. contact address, website)	Cost £
Magazine	'Ecuador Terra Incognita'	Ecuador Terra Incognita	Almagro 1613 y República. Edificio M.S., oficina 502. Quito – Ecuador Tel/Fax: Ecuador + (02) 2529 956 www.terraecuador.net	Approx £1.10

Monitoring, Evaluation and Lessons

Ecuadorian partners have all provided regular reports of progress. This includes field reports, 6 monthly and yearly reports to the UK PI. The emphasis has been on providing information on progress. This has allowed trust to develop between partners and problems and issues to be dealt with as a team. Regular email contact has been invaluable in ensuring all team members have a clear idea of project direction and any changes.

In the first year the indicators of achievements have been based on the successful completion of milestones. However there are further indicators of success - such as increased interest in support for the Los Cedros Biological Reserve from the UK and Ecuador. This is now a known stronghold of populations of *Ateles fusciceps* and there have been increasing numbers of volunteers applying to work at the reserve and increased interest from conservation NGOs in supporting the reserve.

Lessons learned

The diversity of the communities surrounding the Cotacachi-Cayapas Ecological Reserve requires a 'community specific' approach for engagement with the project. We plan to focus the training of year 2 parabiologists in the southern buffer zone of the Cotacachi-Cayapas Ecological reserve. Communities in this region are less isolated, and have easier access to the training centre at the Los Cedros Reserve, than communities from the North. Following an evaluation of the success of the training we will determine whether to apply the same model to communities in the northern buffer zone or whether we need to develop a mobile training course to provide 'in situ' training for more isolated environments

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>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</p> <ul style="list-style-type: none"> • 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 			
<p>Purpose <i>To develop a comprehensive strategy for the critically endangered Brown -Headed Spider Monkey (Ateles fusciceps), vulnerable primates and habitats in NW Ecuador based on a programme of monitoring, education and sustainable livelihoods within local communities.</i></p>	<p>Primate and habitat monitoring programme in place by Yr 3 to monitor effectiveness of educational programme and increased habitat protection on primate species.</p> <p>Educational programme effectively disseminating conservation material to local communities.</p>	<p>National level educational material completed and disseminated</p> <p>Primate, habitat, remote sensing and GIS monitoring methods under development.</p>	<p>Focus on community level outreach programme for southern buffer zone of the Cotocachi-Cayapas Ecological Reserve.</p> <p>Training of parabiologists.</p> <p>Ongoing field monitoring.</p>
<p>Outputs</p>			
<p><i>Network established to monitor primate status and habitat using participatory field surveys and trained village-level parabiologists.</i></p>	<p>Partner Institution staff carrying out primate surveys & rapid habitat assessments (Yrs 1,2,3). Up to 20 community parabiologists providing primate data and disseminating educational material.</p>	<p>Review of organisations working in buffer zones, interviews with key personnel and identification of parabiologists complete</p> <p>Preliminary primate survey of Los Cedros Biological Reserve (LCBR) completed.</p> <p>Rapid habitat assessment collections completed data under analysis – complete inventory of permanent one hectare site 70% complete.</p>	<p>Diversity of communities means a ‘community specific’ approach needs to be taken thorough appropriate channels of community hierarchy.</p> <p>To bridge poor resolution of remote sensing imagery and labour intensive botanical assessment the role of large scale remote aerial photography on low-cost helium balloon platform as rapid habitat assessment and metric for carrying capacity will be explored.</p>

<i>GIS database established at Los Cedros Biological Reserve.</i>	Data from field surveys updated to database by trained local staff.	LANDSAT remote sensed images, aerial photographs and maps georeferenced to GIS database.	Reserve staff to be trained in data management and input to GIS database
<i>Public awareness campaign focusing on primate conservation disseminated via network.</i>	Causes of unsustainable behaviour identified through participatory methods and public awareness material developed and printed (specific to indigenous Awa, Chachi, Afro Ecuadorian and Mestizo communities); up to 5000 copies per year distributed.	Publication of special issue of Ecuador Terra Incognita – 22,000 issues circulated within Ecuador in more than 60 cities and towns (March 2006). 4000 copies to be distributed freely within buffer zone communities.	Year 2 has a strong focus on linking to communities within the buffer zone of Cotacachi-Cayapas Ecological Reserve. Year 2 will focus on Southern Buffer zone, Year 3 on Northern zone, as greater isolation of Chachi, Awa and AfroEcuadorian community groups requires more time to establish links and trust.
<i>Masters level training for Ecuadorian Partners.</i>	Primate Survey Principal investigator (PI) qualifies in MA in Participation, development and social change. Botanic Research Assistant (RA) qualifies in MSc Botany (Forest Ecology).	Botanist undertaking MSc certificate in Forest Ecology at San Francisco University, Ecuador (Started Sept 2005)	
<i>Training centre for Parabiologists and local staff established at Los Cedros Biological Reserve.</i>	<i>Training Centre materials established by Yr 2 and training underway of local staff and parabiologists (Yrs 2,3).</i>	Wilderness First Aid Course (Aug 05) Ecuadorian Undergraduate thesis in primate survey in progress at LCBR UK MSc project in Environmental Forestry (University of Wales) in progress	Greater focus on promoting LCBR as a field station for research and training. 4 UK MSc project students to carry out research at reserve in 2006 with local staff employed and trained alongside students.
<i>Parabiologists trained as certified primate and habitat ecologists.</i>	<i>Up to 20 community members trained as certified parabiologists (Yrs 2,3).</i>	Hotspot communities and parabiologists identified [Appendix 2]	Development of participatory training course. Training of parabiologists.
<i>Sustainable Livelihoods</i>	<i>Parabiologists supported long-term as per exit strategy.</i> <i>Other sustainable livelihood programmes identified and initiated.</i>	Ongoing funding interest from Holly Hills Trust (UK) in support of Ecuadorian students and parabiologists (Currently £2000 pa)	Expand network to link to sustainable livelihood projects within Ecuador. Visits planned by PI to 2 NGO watershed restoration projects (June 2006)



LOGICAL FRAMEWORK

<i>Project summary</i>	<i>Measurable Indicators</i>	<i>Means of verification</i>	<i>Important Assumptions</i>
<p><i>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</i></p> <ul style="list-style-type: none"> <i>the conservation of biological diversity,</i> <i>the sustainable use of its components, and</i> <i>the fair and equitable sharing of benefits arising out of the utilisation of genetic resources</i> 			
<p><i>Purpose –</i></p> <p><i>To develop a comprehensive strategy for the critically endangered Brown - Headed Spider Monkey (<i>Ateles fusciceps</i>), vulnerable primates and habitats in NW Ecuador based on a programme of monitoring, education and sustainable livelihoods within local communities.</i></p>	<p>Primate and habitat monitoring programme in place by Yr 3 to monitor effectiveness of educational programme and increased habitat protection on primate species.</p> <p>Educational programme effectively disseminating conservation material to local communities.</p>	<p>GIS imagery published to Internet showing primate distributions and numbers.</p> <p>Monitoring programme providing robust primate data to GIS database (Field reports).</p> <p><i>Educational material published & disseminated to communities via network.</i></p>	<p><i>Network members remain viable and committed.</i></p> <p><i>Effectiveness of network and educational programme proven and disseminated to policymakers leading to long-term support by government and NGOs.</i></p>
<i>Outputs</i>			
<p><i>Network established to monitor primate status and habitat using participatory field surveys and trained village-level parabiologists.</i></p>	<p>Partner Institution staff carrying out primate surveys & rapid habitat assessments (Yrs 1,2,3). Up to 20 community parabiologists providing primate data and disseminating educational material.</p>	<p>Robust Field survey data (Field reports) (Yrs 1,2,3).</p> <p>Field data published to database & GIS updated biannually (Yrs 2,3) and published to internet website.</p>	<p><i>Parabiologists living in communities are able to provide reliable biological field data following appropriate training.</i></p>
<p><i>GIS database established at Los Cedros Biological Reserve.</i></p>	<p>Data from field surveys updated to database by trained local staff.</p>	<p>GIS database published to internet showing distributions of primates and habitat status (Yrs 2,3).</p>	<p><i>Sufficient training and support for local staff in maintenance of database.</i></p>
<p><i>Public awareness campaign focusing on primate conservation disseminated via network.</i></p>	<p>Causes of unsustainable behaviour identified through participatory methods and public awareness material developed and printed (specific to indigenous Awa, Chachi, Afro Ecuadorian and Mestizo communities); up to 5000 copies per year distributed.</p>	<p>Publication of material for environmental awareness campaign (Yrs 1,2,3).</p>	<p><i>Material developed is sufficiently targeted and reaches and positively influences local communities.</i></p>
<p><i>Masters level training for Ecuadorian Partners.</i></p>	<p><i>Primate Survey Principal investigator (PI) qualifies in MA in Participation, development and social change. Botany Research Assistant (RA) qualifies in MSc Botany (Forest Ecology).</i></p>	<p><i>MA certificate from IDS, UK (Yr 3). MSc certificate in Forest Ecology from San Francisco University, Ecuador (Yr 3).</i></p>	<p><i>Candidates for PI and RA positions sufficiently qualified to undertake and complete MA and MSc courses.</i></p>
<p><i>Training centre for</i></p>	<p><i>Training Centre materials</i></p>	<p><i>Training course</i></p>	<p><i>All partners</i></p>

<i>Parabiologists and local staff established at Los Cedros Biological Reserve.</i>	<i>established by Yr 2 and training underway of local staff and parabiologists (Yrs 2,3).</i>	<i>developed (Yr 1) and teaching materials published (Yr 2). DVD course 'training the trainer – running a parabiologist training course' complete (Yr 3).</i>	<i>contribute relevant expertise to developing training material.</i>
<i>Parabiologists trained as certified primate and habitat ecologists.</i>	<i>Up to 20 community members trained as certified parabiologists (Yrs 2,3).</i>	<i>Up to 20 parabiologists receive Parabiologist certificate 'Forest ecology and field survey methods'.</i>	<i>Sufficient interest from within community members to become parabiologists.</i>
<i>Sustainable Livelihoods</i>	<i>Parabiologists supported long-term as per exit strategy. Other sustainable livelihood programmes identified and initiated.</i>	<i>Ongoing national and international funding after Yr 3. Links between Parabiologists and other sustainable livelihood projects established.</i>	<i>Parabiologist network provides rigorous scientific data and disseminated to policymakers leading to long-term support by government and NGOs.</i>
Activities			
Workshops	<p>Yr 1 Project planning (2 wks - June 05). Training Parabiologists - methodological Review (2 wks May 06).</p> <p>Yr 2 Field methods - participatory surveys, plant inventory & rapid habitat assessment (2 wks May 07).</p> <p>Yr 3 Participatory community networks in conservation, Disseminating primate conservation data to the policy arena, and final review (2 wks May 08). University of Sussex Workshop/Mini conference.</p> <p>Participatory methods and conservation networks – Parabiologist workshop (2 wks Apr 08).</p>		
Training courses	<p>Yr 1. Wilderness First Aid (Red Cross, Quito) – for field survey staff (Jul 05). Database management - local staff training 'Survey data management' (2 wks May 06).</p> <p>Yr 2. Primate survey methods and environmental education for parabiologists ('Forest ecology and field survey methods') (2wks Sept 06).</p> <p>Yr 3. Primate survey methods and environmental education for parabiologists ('Forest ecology and field survey methods') (2wks Jun 07).</p>		
GIS database	<p>Yr 2. GIS format database established and transferred to Los Cedros Biological Reserve (Apr 07).</p> <p>Yrs 2- 3. Data from field surveys updated to GIS database – GIS published to web and disseminated to policymakers (May 07+).</p>		
Field Research programme	<p>Yr 1. Expeditionary field surveys (8 *14d/month) to communities in NW Ecuador within buffer zones and proposed ecological corridors to identify primate 'hotspots'. Identify potential parabiologists from community groups. Forest inventories and development of rapid habitat assessment methods.</p> <p>Yr 2. Ongoing field surveys (8 *14d/month) to collect primate observations from communities, distribute educational material and support community parabiologists. Field surveys to apply habitat assessment methods to regions observing primates. Collection of digital imagery from fieldwork to develop training DVDs</p> <p>Yr 3. Ongoing collection of field data and support for parabiologists through expeditionary surveys and habitat assessments (14 days/month for 8 months).</p>		
Manuals Training Material Community education	<p>Yr 1. Develop & publish community public awareness material (5000 copies) (Apr 06).</p> <p>Yr 2. 'Rapid habitat assessment' field manual and 'Participatory methods in field monitoring programmes' manual (Project specific draft Oct 06, complete May 08). Parabiologist training material - localise material to various community requirements (i.e. illustrated teaching materials), DVD instructional videos localised to language groups (Awa, Chachi, Spanish). Update and &</p>		

material	publish Yr 2 community public awareness material (5000 copies). Yr 3. Full instructional course (DVD) in leading parabiologist training courses. Para-biologists training course material supported by DVD to illustrate fieldwork methods. Develop & publish Yr 3 community educational materials (5000 copies). Manual: Conservation education programmes – Monitoring the effectiveness of educational programmes (Draft Jan 08, Publication May 08).
Publicity material Publications	Publication of Darwin Initiative project information in Ecuador - Terra Incognita Magazine. Local Radio Broadcasts and National Radio Broadcasts. Press release to TV Yr 1, Yr 2 and Yr 3. Publication of educational and public awareness material (localised to appropriate language groups). Peer reviewed scientific publications (minimum 4) as result of project. Publication of field manuals. Darwin Initiative project Internet site developed to host GIS map of primate and habitat status, publicise project and disseminate results. Publication of Species Action and Habitat Management Plans (Yr 3)