



Developing a sustainable network for primates in Ecuador (PRIMENET)

Annual Report (Year 2)

Project number 14-040

Dr Mika Peck (PI), Diego Tirira, Ana Mariscal.

Darwin Initiative Annual Report

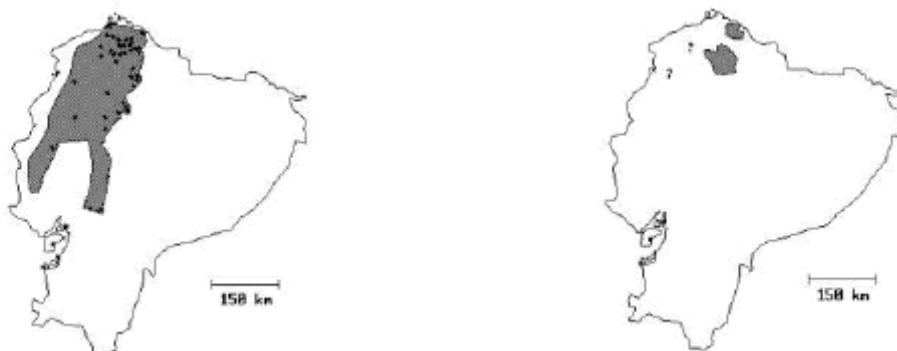
Darwin Project Information

Project Ref Number	14-040
Project Title	Developing a sustainable network for primates in Ecuador (PRIMENET)
Country(ies)	Ecuador
UK Contract Holder Institution	The University of Sussex
UK Partner Institution(s)	
Host country Partner Institution(s)	CORE PARTNERS: Murcielago Blanco, Ecuador Terra Incognita, QNCE (National Herbarium of Ecuador – administered by Corporación Botánica Ecuadendron) , Los Cedros Biological Reserve
Darwin Grant Value	£236 270
Start/End dates of Project	June 2005 – May 2008
Reporting period (1 Apr 2006 to 31 Mar 2007) and annual report number (2)	1 st April 2006 – 31 st March 2007
Project Leader Name	Dr Mika Peck
Project website	www.primenet.org.uk
Author(s), date	Dr Mika Peck, Diego Tirira, Ana Mariscal (25 th April 2007)

1. Project Background

The brown-headed spider monkey (*Ateles fusciceps*) is endemic to the Chocó-Darién-Western Ecuador global biodiversity hotspot. Wholly dependant on primary forest it represents an ideal indicator of ecosystem conditions; its 'critically endangered' IUCN classification, reflects its intrinsic conservation value. Research has documented a recent population reduction of 80% due to habitat destruction, principally by national and international logging operations, and hunting resulting in surviving populations now being restricted to reserves (Reserve Etnologica Awa and Reserve Ecologica Cotacachi-Cayapas) (see Figure below for the change in distribution of the brown-headed-spider monkey). Today primary forest in NW Ecuador tends to be restricted to protected forests in relatively inaccessible mountainous terrain. Areas

considered the greatest hope for conservation of habitat and large vertebrates include the 2000 km² Cotacachi-Cayapas ecological reserve and contiguous reserves such as the 60 km² Los Cedros Biological Reserve.



Left: Historical distribution of *Ateles fusciceps* in Ecuador. Right: Distribution in 2003.

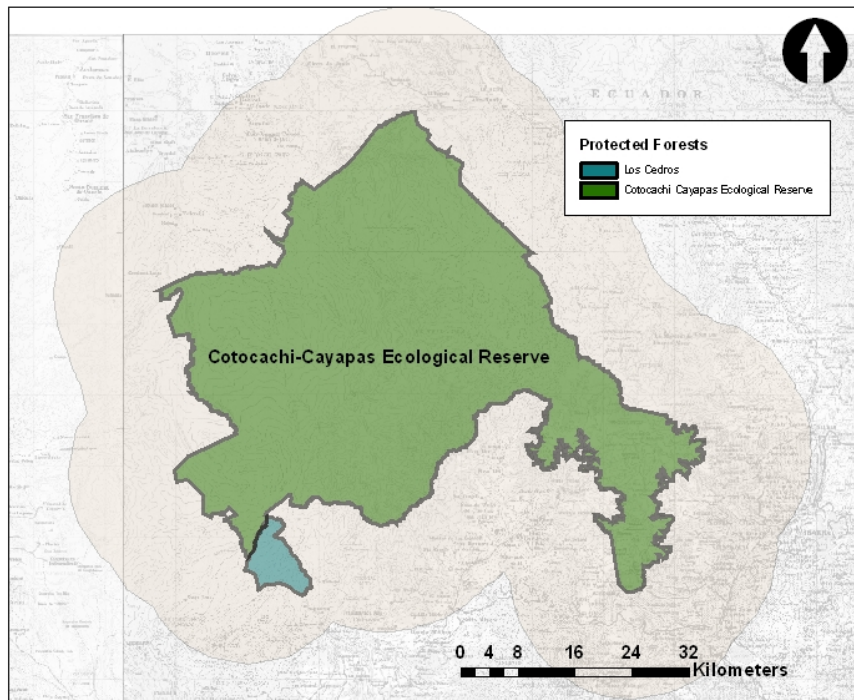
The survival of the species is dependant on the unknown premise that the refuges provided by these protected areas are sufficient. In 2001 the Ecuadorian government signed up to Vision 2010 with the objective of establishing ecological corridors to connect protected areas within the Chocó-Darién-Western Ecuador hotspot. This will provide an invaluable opportunity for the sustainable conservation of the brown-headed spider monkey, other vulnerable primates (i.e. black mantled howler, *Alouatta palliata*, white-throated capuchin, *Cebus capucinus*), and the unique biodiversity of their associated habitats. The PRIMENET project will ensure that these efforts are underpinned by a scientific understanding of the effects of habitat destruction, habitat fragmentation and species ecology of the primates at risk. However, their sustainable conservation requires more than scientific understanding: reserve areas remain vulnerable to hunting from local communities where economic pressures and limited educational resources obscure their conservation value. PRIMENET proposes a strategy to advance the scientific basis for their conservation management and establish a long-term programme based on:

Monitoring - bioassessment of primate populations and their associated habitats through field surveys and the training of a network of parabiologists.

Education - raising environmental awareness through educational programmes disseminated through parabiologists and community partnership networks and at a national level.

Identification of sustainable livelihoods - raising awareness of economic value derived from conservation of ecological resources. The PRIMENET project aims to conserve 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.

Darwin Initiative PRIMENET project



Map showing the focus of the PRIMENET project. Highlighted is a 15km buffer zone to the Cotacachi-Cayapas Ecological Reserve that forms the focus of community training.

Source: PRIMENET GIS Database

2. Project Partnerships

The partners bring their own expertise to this multidisciplinary project. The UK partner has focused on project management, methods development and GIS/remote sensing, Corporación Botánica Ecuadendron (National Herbarium) on plant inventories and habitat assessment methods and Murcielago Blanco on primate survey and educational outreach (with the establishment of the NGO Murcielago Blanco by Diego Tirira, our Ecuadorian team leader, in country project management was transferred to Murcielago Blanco in Jan 2007 – this was approved by the DI). The partners all work together to produce materials, run the parabiologist workshops and coordinate field surveys. The partnerships have worked extremely well over this year and we are now preparing future project bids as part of the exit strategy for ongoing support of the parabiologist network.

These field monitoring and educational programmes enacted by an expert field survey team in association with indigenous and colonist village community members trained as parabiologists and supported by academic institutions and NGOs are supporting the Governments implementation of the CBD with a particular focus on articles 7, 8, 8j, 10, 12, 13, 16 and 18. The project incorporates the ecosystem approach (with focus on principles 2, 11, 12 and operational guidelines 1-5, Decision V/6 CBD, 2000) to provide emphasis on forest biodiversity, indicators and protected areas.

The project has provided a platform for multidisciplinary research within the lead institution, the University of Sussex. The collaboration has been particularly strong between the Department of Geography, offering remote sensing expertise, and the Department of Biology and Environmental Sciences. Additional inter-institutional links have been built between the Institute of Development Studies and the University through the incorporation of the MA in Participation and Social Change. This will be further strengthened this year as the Ecuadorian MA candidate begins her research thesis. Strengthening Intra-institutional bonds has increased the capacity of the lead partner to provide adequate project management. A special note must be made of the excellent job carried out by the financial department with respect to budget management.

Collaborations with other UK Institutions

University of Oxford-Brookes – The PRIMENET project has made direct links with the MSc in Primate Conservation. In 2006 four MSc students completed their MSc thesis projects with PRIMENET. Their projects have added considerably to the scope of the project and covered; 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 *A.fusciceps* at the Los Cedros Biological Reserve, 3) Establishment of a community-based restoration reforestation project and 4) Census of the mantled howler monkey (*Alouatta palliata*) in the Los Cedros Biological reserve using triangulation of vocalisations.

The work has resulted in presentation of results at conferences (e.g. Primate Society of Great Britain Winter Meeting) and the preparation of scientific papers for submission. In 2007 the PRIMENET project will host two MSc projects – one to develop an innovative rapid survey method for *A. fusciceps* using playback and another, a desk study, based on our field survey results and the GIS database to carry out a Population Viability Analysis for the critically endangered *A. fusciceps*.

University of Wales – In 2006 Austin Haffenden published his thesis carried out with the PRIMENET habitat assessment team on 'pioneer species ecology: co-existence and ecological differences amongst contrasting species' for an MSc in Environmental Forestry. It is expected that this will lead to a scientific publication in a peer reviewed journal.

Rainforest Concern (UK) – the NGO Rainforest Concern is working in NW Ecuador to establish a habitat corridor to connect remaining habitat in NW Ecuador. It also works to support and develop sustainable livelihoods. They contacted PRIMENET and invited staff (PI, Botanist and MSc student) to visit a number of sustainable alternative livelihood and reforestation projects they have supported in the region. This has resulted in a number of collaborations that include a community-exchange programme whereby local expertise is disseminated through exchange programmes. This was funded by the Network for Social Change in 2007 and will be organised by PRIMENET to take place in July. In addition, as part of our exit strategy, we are bidding for support by Earthwatch to maintain the primate and habitat surveys and expand the monitoring programme to other threatened mammals such as the spectacled bear and big cats such as the jaguar and puma. Should this bid be successful Rainforest Concern will support the 3 years of the project with a contribution of £10 000.

Holly Hills Trust (UK) – the trust has contributed a further £2000 for the second year of the PRIMENET project to support parabiologist training and student research projects.

International

Missouri Botanical Gardens (USA) – Following incorporation of a permanent 1 hectare inventoried plot at the Los Cedros Biological Reserve into the 'Forest remnants of the Ecuadorian Pacific Coast' Project the MBG are continuing to support the habitat assessment work by providing expert advice.

Ecuadorian

The field guide to mammals 2007 of Ecuador, published in March, was a result of collaboration between PRIMENET, the University of Sussex, Conservation International and the Ecuadorian Museum of Natural Sciences. It is the first field guide for Ecuadorian mammals providing a key reference tool for parabiologists and PRIMENET researchers.

DECOIN – strong links have been developed with this local NGO and we are supporting some of their initiatives by training parabiologists to survey community forests.

The project has links to the CBD focal point thorough the Ministry of Environment that have supported all licences for botanical collection for the PRIMENET project.

3. Project progress

3.1 Progress in carrying out project activities

Output 1. Network established to monitor primate status and habitat using participatory field surveys and trained village-level parabiologists.

The status of activities is divided into 1) field survey status and 2) status of the GIS database that will house all the collected information.

1) Field Surveys

Primate surveys (Murcielargo Blanco/University of Sussex) - Initial primate field studies are now complete and have provided the first reliable data regarding population status and characteristics, activity patterns and habitat preferences of the three primate species inhabiting the study area, *Alouatta palliata*, *Ateles fusciceps* and *Cebus capucinus*. Ongoing surveys with parabiologists form the theses of two Ecuadorian BSc students that are currently underway as part of the community educational program (see output 3). A major issue raised from the first year of primate survey fieldwork was that primates are increasingly restricted to marginal habitats due to encroaching development; in NW Ecuador these are often mountainous areas that pose new problems for conservation programmes such as PRIMENET that are attempting to assess population status. Distance sampling using line transects are considered basic, economical and relatively precise methods for primate survey but there are major drawbacks. Mountainous terrain makes standardised methods such as these difficult to apply, both statistically and physically, and there is the urgent need to develop site-specific survey tools that take into consideration restrictions imposed by this environment. The PRIMENET project has established a series of line transects within the Los Cedros Reserve and generated the first estimates of population densities for the three resident primate species (see thesis results from Gavilanez-Endara 2006 and Magnusson 2006) but there has been little interest from volunteers who visit the reserve in tackling the steep transects required for statistical rigour! There is clearly the urgent need to develop viable alternative methods. In year 2 we will be field testing a

new playback method. These methods use amplified calls of target species to either elicit vocal responses or to increase the rate of visual observations of the target species as they are attracted to the source of the sound. They have been successfully applied to survey golden lion tamarins and are currently under initial development for *A. fusciceps* and *C. capuchinus* by an MSc in Primate Conservation student from Oxford-Brookes in collaboration with PRIMENET. Abundance will be estimated using point samples and standard distance sampling methodology adapted to species-specific responses. Data will be analysed using the industry standard DISTANCE 5.0 program. It is expected that a distance sampling point transect methods (better for difficult terrain) can be easily adapted for *A. fusciceps* and *C. capuchinus*.

Habitat assessment (Corporacion Botanica Ecuadendron - National Herbarium) – A draft of the rapid habitat assessment methods is complete (currently in Spanish – supplementary material). These methods were applied to the first site at the Los Cedros Biological Reserve (1500 masl). The habitat assessment team identified a second lowland site (Febres Cordero) and fieldwork took place from January to March 07. Samples are now in the process of identification at the herbarium. Fieldwork was carried out in collaboration with parabiologists and botany students. This methodology, involving identification of samples to species level, will provide detailed information on structure, composition, diversity and forest dynamics. The rapid assessment method developed requires expert botanists to guide collection and undertake identifications and we are now interested to see whether proxy methods can provide information on status of forest using teams of relatively untrained individuals. Sites already used for detailed assessment will be revisited by members of the Bournemouth University expedition in July 2007. This expedition has been organised in collaboration with PRIMENET, and received funding of £1000 from the Royal Geographical Society. They will be provided with typical basic level training and carry out a rapid assessment of the 30 plots (15x15m) at both Los Cedros and Febres Cordero previously characterised by our botanical team. By collecting structural and physical data and measuring time taken in measurements the data collected by these ‘very rapid’ assessment methods will be compared to existing comprehensive vegetation surveys for each plot to evaluate the efficacy of each method in terms of cost and reliability. The aim is to investigate a potential suite of simple tools and methods that could be rolled out for independent use by parabiologists.

Novel habitat assessment methods using low altitude aerial photographic methods: As described in our previous report we planned to field trial an innovative method to assess habitat via the use of aerial images of the forest canopy collected by a helium balloon photographic platform. We successfully completed a field trial (See working prototype in figure below). Crowns have been matched to trees identified in the hectare plot established at Los Cedros in year 1 and the image georeferenced within a GIS system. It is clear that the method requires a great deal of further fieldwork to calibrate aerial taxonomy keys from crown structure but it shows great potential for habitat assessment. We are planning to apply this method within an Earthwatch project from 2008 – 2011 should our bid for funding be successful (see below for more information regarding this component of the exit strategy).

Both the botanical team and the primate survey team have been working successfully alongside parabiologists trained in September 2006 to collect habitat data and primate data from communities in the buffer zone. The links formed at the community level via the parabiologists has been critical to the acceptance of scientific teams in the communities. Without this kind of linkage scientific survey teams can run into difficulties as they are often viewed with suspicion, as they are commonly associated with mining surveys in the region.

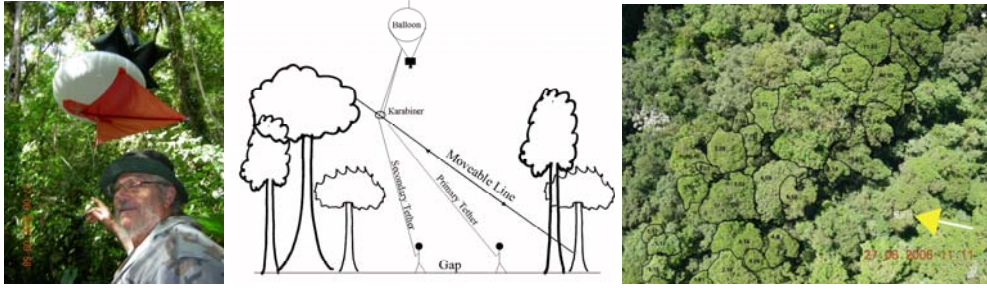


Figure above. Prototype helium balloon remote sensing platform and imagery obtained showing crowns labelled and identified to species from the hectare plot established at the Los Cedros Reserve. The aim is to build 'aerial taxonomy' keys that can be used to identify density of keystone food species, such as figs, and indices of canopy connectivity that are critical to arboreal locomotion (Diagram courtesy of Carlos Gonzales).

2) Status of GIS database

The large scale GIS map of the buffer zone of the Cotacachi-Cayapas Ecological Reserve is nearing completion and contains data layers that include altitude, remaining forest (from classified LANDSAT imagery), protected areas and primate observations to date. The map is to be displayed on the PRIMENET website in 2007. Additional work that included analysis of LANDSAT imagery highlighted a 56% reduction in forest cover from 1987 – 2001 in the 15km buffer zone (BSc thesis project June 2006) This highlights the ongoing rates of forest conversion in the buffer zone and the importance of defining and protecting remaining hotspots of habitat with populations of primates. The GIS dataset is currently in use to carry out an estimate of remaining primate populations (BSc Geography Undergraduate project, University of Sussex) and to carry out a population viability assessment using VORTEX (MSc thesis in Primate Conservation, Oxford-Brookes).

A bespoke PRIMENET database is close to completion by the IT department of Life Sciences at the University of Sussex to provide standardised long-term storage of primate and mammal observations. A web-based front end allows input of observations by parabiologists and field researchers. A linkage to 'google map' allows users instantaneous display of observations in a map format via the web. The database is currently under testing and will be expanded to allow web-based queries. Access to the database will be free to conservation and governmental organisations.

Output 2. GIS database established at Los Cedros Biological Reserve.

A GIS database (ARCVIEW 3.3) has been established at the Los Cedros Biological Reserve. It has layers that hold information on the trail systems, primate transects, and a standardised database for primate observations. Training will be reinforced in 2007 by a short course (June 2007). Additionally staff received a 3-day course in analysis of observations to obtain density and abundance measures using the industry standard computer program DISTANCE 5.0 in September 2006. This course was advertised nationally and was attended by an international conservationist and two Ecuadorian PRIMENET students in addition to the Los Cedros staff member (Course handbook attached as supplementary material).

Output 3. Public awareness campaign focusing on primate conservation disseminated via network.

In year 2 of the project the following educational material was produced:

2.000 books "Guía de campo de los mamíferos del Ecuador" (Field guide to the mammals of Ecuador). It includes relevant information about mammals of Ecuador, with special emphasis on the primates in north-western Ecuador. Copies of this book will be distributed to parabiologists, local communities, and people working on the PRIMENET project.

3.000 'PRIMENET magazines' that include information about the Chocó region, biodiversity, mammals, primate conservation, threatened species, conservation, environmental problems

and a comic. All 3000 magazines will be distributed free to communities in the study region in the coming year as part of the educational outreach in 2007/8.

3.000 stickers highlighting primate conservation and the PRIMENET project.

283 T-shirts, with a new design for the PRIMENET project.

The special issue of Terra Incognita, posters and T-shirts printed last April have already been distributed to communities. The new magazine that focuses on the issues surrounding primate and habitat conservation in the region and stickers are currently in print and will be distributed over the coming year.

Between November and December 2006 several communities in the study area were contacted with the aim of carrying out the environmental education program. This aims to work on two fronts, one at the level of educational centres (schools and colleges) and the other directly with communities. The program will include similar topics to those covered in the parabiologist training course: biodiversity, conservation, primates, threatened species, environmental problems, and natural resources. Communities targeted are: Apuela, Brillasol, Chontal alto & bajo, Cristóbal Colón, Cuellaje, García Moreno, Junín, Magdalena alto & bajo, Peñaherrera.

This program is in execution and begins in May 2007 in the Intag region, moving to the Los Cedros region and on to Cristobal Colon. It continues in the southern zone until July 2007 and then moves to the northern zone (Sept to Dec 2007)

Output 4. Masters level training for Ecuadorian Partners.

MA in Participation and Social Change at the Institute of development studies, IDS (Brighton, UK). Karina Paredes, from the primate survey and educational team, has registered for the MA and will begin a 10 week residential course at IDS in September 2007, following that she will undertake her fieldwork for her thesis focusing on community education with PRIMENET. She then returns to the UK for a final 10 week period at IDS for completion of the MA. MSc in Forest Ecology at the University of San Francisco (Quito, Ecuador) - Nelson Miranda has successfully completed the first year and passed the examination. He is currently embarking on his fieldwork thesis project with the herbarium and PRIMENET (1 year) that contributes to our goals of habitat assessment and sustainable livelihoods (see output 7 for more detail).

Output 5. Training centre for Parabiologists and local staff established at Los Cedros Biological Reserve.

Parabiologist training materials (Text, DVD, presentations) completed and applied during September 2006 Parabiologist training course. All material from the course is available on the CD included as supplementary material. In addition a DVD in Spanish and English was developed for reserve volunteers and parabiologists to demonstrate field methods and protocol for primate survey. The parabiologist training course will take place at a lowland site (Cristobal Colon) in June 2007 as this is logistically more convenient in training the Chachi and Afro Ecuadorian communities. The final workshop/training session is planned for Los Cedros.

Output 6. Parabiologists trained as certified primate and habitat ecologists

Parabiologist training course (100 hours) completed with 25 participants from 6 communities of the Southern Buffer Zone of Cotocachi-Cayapas Ecological Reserve attending and successfully completing course (11th – 15th September 2006). Our website shows a short video providing an overview of parabiologist training; see it under resources at www.primenet.org.uk.

Output 7. Sustainable Livelihoods

A successful exit strategy to maintain the parabiologist network would contribute to achieving this output. A preliminary proposal to Earthwatch has been successful and we have just submitted a full proposal for support entitled 'SURVIVE – climate change, canopies and charismatic mammals' with aim of maintaining primate surveys within protected areas of NW Ecuador and to expand monitoring to other threatened mammals such as the jaguar, puma and spectacled bear using networks of camera traps. The project would also allow us to continue

development of the 'aerial taxonomy keys' by collecting images throughout the altitudinal range. Rainforest Concern has committed £10 000 to support the initiative should the bid to Earthwatch be approved (proposal attached). This would ensure the ongoing economic support of Los Cedros Reserve and the Santa Lucia Reserve and staff and parabiologists already trained by PRIMENET.

The MSc thesis in botany aims to investigate the potential for sustainable forest use in four of the communities from which parabiologists are already trained. Questionnaires and interviews will initially be carried out to identify the value of forest to communities. Then a field inventory using the habitat assessment methods developed in PRIMENET will be undertaken to identify plants with potential commercial value using sustainable extraction criteria.

Parabiologists highlighted the interest in maintaining links between communities during the participatory phase of the parabiologist training course. This has led to the development of an inter-community training initiative. We submitted a successful proposal for funding to the Network for Social Change (£2104) to allow community exchanges and knowledge/skills transfer. Members of communities with differing expertise will host workshops for other communities to explain sustainable livelihood options. The aim is to ensure the dissemination of initiatives that have already been shown to work. The first community exchange workshop will take place at Cristobal Colon from 2nd to 6th July where there is expertise in sustainable community management of logging (ECOMADERA project) and a community group of honorary wildlife inspectors that have successfully dealt with illegal dynamite fishing and hunting in the region. Visiting them will be 8 people from four communities interested in applying this knowledge. The second exchange programme will take place at Chontal (where there is experience in Community Ecotourism), again hosting 8 people from 4 lowland communities. The aim is to generate grassroots contacts and sustainable livelihood initiatives.

3.2 Progress towards Project Outputs

Progress towards all seven outputs has been substantial to this stage and it is expected that the project will attain all outputs by the end of year 3. Progress towards each output is summarised below;

Partner institutions are carrying out primate surveys and habitat assessments effectively. The first parabiologist training course proved to be extremely popular and field teams are now integrating with parabiologists to undertake habitat and primate surveys and educational dissemination within communities to expand educational outreach.

A GIS database has been established in the reserve and is being maintained with updated information from field surveys by reserve staff. Ongoing training to be given as required.

The parabiologist training course included participatory sessions to identify the causes of unsustainable behaviour; some were community-specific and ranged from negative impacts from mining and palm oil plantations to uncontrolled tourism. Educational material has been published, and disseminated nationally, regionally and at village level.

The Masters programmes for Ecuadorian staff are all proceeding as planned although there has been a slight delay to the MA in Participation and Social change with the course starting in September 2007 (This was due to a timetable change by the Institute of Development Studies)

Training material for a 100 hour parabiologist training course is complete and 25 parabiologists from 6 communities have been trained to date

With respect to sustainable livelihoods a number of activities are contributing to this output. One is the development and submission of proposals to maintain and expand the monitoring network (A submission to Earthwatch has been completed with financial support from Rainforest Concern should the bid prove successful). Another is the successful funding of a community exchange programme to allow community level workshops to take place for dissemination of

sustainable livelihood shown to work. Finally, research by our Ecuadorian MSc candidate for his thesis is investigating the potential for sustainable forest use.

All output level assumptions still hold.

3.3 Standard Output Measures

Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	TOTAL
4 A	Undergraduate training 8 Ecuadorian students (Field placements in botany, Primatology), 2 UK students, 1 Chilean.		11			
4 B	Training weeks provided		16			
4 C	5 UK MSc Postgrads receiving training		5			
4 D	Postgrad training weeks		10			
5	Appointed DI Ecuadorian Staff (06), 1 Ecuadorian BSc Completes thesis (1 year) (07)	4	1			
6 A,B	Parabiologist Training Course		1			
7	Delivery of parabiologist training module, DVD training video		2			
8	UK PI attends project setup/workshops & training 06, training course and field work 07 (12 weeks total)	1	2			
10	Publication of 'Field guide to mammals of Ecuador'		1			
12 A	GIS database established at Los Cedros Reserve		1			
14 B	Conference/ seminar/ workshop presentations of project		3			

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	TOTAL
15A	Press release (June 05). *Major press release (Mar 06). Release June 06	2	1			
15B	Local Press releases	1				
15C	Press release UK (Guardian 06), HERO 06.	1	1			
15D	Local Press release UK , BBC Radio	1	1			
16 A	PRIMENET magazine & cartoon		1			
16 B	Circulation of above 3000		1			
17A	Internet presence & discussion group 06 Parabiologist and community exchange network 07	1	2			
19 D	BBC Southern Counties interview		1			
22	Permanent hectare plot (Los Cedros Reserve) plus 2 sites for habitat assessment 07		3			
23	'In kind contributions' £49991(06), £50151 (07) plus direct financial support from fund raising totalling £2750.	1	1			

Table 1 Publications

Type *	Detail	Publishers	Available from	Cost £
(eg journals, manual, CDs)	(title, author, year)	(name, city)	(eg contact address, website)	
Field Guide *	Mamíferos del Ecuador, Diego Tirira, 2007 (English title: Mammals of Ecuador)	Murciélagos Blanco, Quito, Ecuador	Murciélagos Blanco, Apdo. 17-17-761 Quito Ecuador Web:	£20 (\$40)

			www.murcielagoblanco.com/ email: info@murcielagoblanco.com	
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3.4 Progress towards the project purpose and outcomes

The review of year 1 noted that there is a slight gap between the project title and the project purpose. To that end we have adjusted the purpose statement to better convey the expected impacts of activities and outputs.

‘Purpose: To *conserve* 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.’

Progress has been made through increased understand of the status of habitat and populations of primates in the region. The project has an ongoing mission to disseminate information at all levels (local, national and international) resulting in ‘purpose level’ impacts. The survey and monitoring information generated in the first and second year to identify risks to spider monkeys by the PRIMENET project contributed to the rejection, by the Ecuadorian government, of an EIA for a proposed multinational open cast mine whose concessions covered 40 km². This dataset would have been unavailable had the PRIMENET project not existed.

Impacts due to the educational programme are hoped to contribute to addressing the key issues of hunting and habitat degradation as the sustainable conservation of primates requires more than scientific understanding. Reserve areas remain vulnerable to hunting from local communities, particularly at the ‘edges’, where economic pressures and limited educational resources obscure conservation value. The educational outreach that works at the village level throughout the region aims to provide information regarding the status of primates and habitat. It is hoped that the value of the educational programme, and the material created for use in classrooms, will be recognised and incorporated in the teaching curriculum in the long term.

Sustainable livelihoods are the key to conservation success in the region. There is the urgent need to develop and support sustainable livelihood initiatives as we have seen from our analysis of remote sensing data that deforestation is ongoing, with 56% of the forest habitat converted to other use from 1987 to 2001 within the 15kn buffer zone that forms the focus of our project. PRIMENET has played a key role in establishing a community exchange programme whereby expertise and best practise developed in one region in particular sustainable livelihoods can be disseminated to other interested community groups and organisations. The research programme also focuses on investigating potential sustainable use of forest with information generated by the project (MSc botany) providing potential sustainable livelihoods options for community members. In the near future a key role will be played by reserves and protected forests in conserving forest habitat and associated species, particularly the larger ‘charismatic mammals’, which are already under huge pressures. There is the urgent need for direct financial support to ensure the protection of these remaining forests that goes beyond the scope of this Darwin project; however we are providing direct support to reserves by increasing visitation rates by researchers, students and interested public that provides a small income stream.

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

As detailed in section 10 a direct impact of the PRIMENET project has been the provision of information to the Ecuadorian government that contributed to the rejection of the environmental impact assessment of a proposed multinational open cast mine that would have impacted an

area of up to 4000 ha. Additionally, increased visitation rates to the Los Cedros Reserve, although still small, has provided a critical extra income stream that it requires to defend the protected forest from ongoing threats. Results of the educational programme are hard to determine without a full monitoring programme focusing on the status of primate populations yet to be established. The PRIMENET project aims to establish a wider primate survey and monitoring programme by the end of year 3 to provide a direct measure of conservation success or failure.

4. Monitoring, evaluation and lessons

At present the monitoring of the project is based on successful completion of activities and outputs as described in detail above. Fundamentally project success depends on providing information on the status of primates and habitat, the successful training of parabiologists and conservation of remaining habitat and populations of primates through education, identification of risks and provision of alternatives to logging and hunting i.e. sustainable livelihood initiatives.

The short term nature of the Darwin projects does mean there are clear limits to what can be achieved and success fundamentally requires long-term support. This will become the focus of the exit strategy.

A major issue that has arisen from the project to date has been to understand the difficulties associated with maintaining protected forest, as exemplified by the Los Cedros Reserve. While funds often exist to purchase land and place it under legal protection it often becomes a struggle to maintain flows of funds for the much less glamorous daily costs associated with maintenance of reserve infrastructure and ongoing legal and logistical costs associated with ongoing threats to the land from land speculators and mining and logging interests. Clearly establishment of a centre of learning dedicated to conservation by the PRIMENET project will benefit the reserve financially to a small degree through increased visitation in the short and long term, and we have already seen conservation benefits from the data generated (See section 10), however, this will not generate an income required for long-term financial security essential if habitat and biodiversity conservation is to succeed. Future plans and work must be dedicated to finding sources of funding to ensure reserve staff can receive secure salaries in the long term. This is a fundamental requirement should protected forest actually become more than a 'park on paper'. Future work must focus on directly addressing the financial requirements of protected forests in Ecuador. A potential glimmer of hope exists if existing forest can be recognised as 'legal tender' under the proposed carbon economy but there are political hurdles to overcome as of yet. Although we have used the example of the Los Cedros Reserve this applies to most if not all protected forest in the region with government-run forests also suffering from a lack of funding that impacts on their ability to protect habitat and species.

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

The previous review highlighted a slight gap between the project title, purpose and focus of actions. We have tried to address this by redefining the purpose of the project (see section 3.4). Also, the review raised potential issues associated with application of the 'aerial taxonomy methods' to habitat assessment. We have successfully field tested the techniques but we do recognise that a full habitat assessment using these tools is unrealistic within the timescale and budget represented by the PRIMENET project. To this end we have applied for funding by Earthwatch to carry this out from 2008 – 2011 (A proposal to the Leverhulme trust although receiving favourable reviews was unfortunately rejected at the second stage). This would also serve as an appropriate exit strategy in guaranteeing an income stream from Earthwatch volunteers to two reserves (Los Cedros Biological reserve and the Santa Lucia Reserve). Rainforest Concern has committed a further £10000 to this initiative should the bid to Earthwatch be successful.

Additionally the reviewer commented that the project, rather than developing a 'sustainable network for primate conservation' is more likely to be a 'sustained' network for primate conservation. This is debatable in that the networks generated between communities, NGOs, universities and governmental organisations will have an expanded capacity to address and apply for future support. However it is clear that there is critical under-funding of conservation initiatives in the region and that a **sustained** fundraising initiative or changes to the perceived value of forest at a national and international level are required to ensure long term survival.

6. Other comments on progress not covered elsewhere

No major comments that are not covered elsewhere, however it is important to recognise that the threats faced by remaining primary forest in Ecuador are extremely pressing. There is the urgent need for any exit strategy to maintain the viability of protected forests and to identify and support sustainable livelihoods.

7. Sustainability

The profile of the PRIMENET project was raised at a national level by the special edition of Terra Incognita, Published in March 2006. This led a number of enquiries and volunteers engaging with the project. The capacity to conserve habitat has been increased as parabiologists and communities are capable of reporting risks to habitat and primates via the network. These risks can then start to be addressed at the appropriate level; local, national or even international.

The exit strategy is currently the major focus of the lead partners, with a number of proposals to funding agencies already submitted or under submission (i.e. Leverhulme Trust, Earthwatch). The aim is to approach some of our partner NGOs in year 3 with proposals to support the parabiologist network once the database is fully functional and training is complete.

8. Dissemination

Dissemination activities form an integral component of the project and have been described in detail under output 3 of section 3 above. In year 2 the focus has been on dissemination at the community level in the Southern Buffer zone of the Cotacachi-Cayapas Ecological Reserve. This is ongoing and will then be extended to the Northern Zone.

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

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

9. Project Expenditure

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

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

'Awareness raising – habitat saved' - The PRIMENET project aims to conserve remaining primates and their habitat in NW Ecuador and works by linking to local communities and training community-level 'parabiologists'. These parabiologists provide a link to the grassroots to collect scientific information on abundance of primates and report risks to habitat. As such it acts to empower communities, giving them a voice, by linking scientists, NGOs and local and national

government. Over the year we have also linked to a number of community based organisations that have developed sustainable alternatives to logging and mining in the region, and our project is running community exchange programmes to disseminate this locally developed knowledge. However, this investment in local capacity building had come under threat. Investment in conservation and sustainable livelihood often finds itself up against well funded operations involved in the exact opposite activity. In this case a transnational mining company, Ascendent copper corporation, had purchased a mining concession in the biodiversity hotspot of the NW Andes within our zone of study. Local community and local governmental opposition to mining here has been fierce over the years and already resulted in one mining company withdrawing from the region due to local community opposition.

Tension had been growing recently, attracting the attention of Minewatch Canada and a number of human-rights NGOs. Work by the Darwin Initiative PRIMENET project on the possible impacts of mining activity on the critically endangered Spider Monkey (*Ateles fusciceps*) allowed us to provide a critique of the Environmental Impact Study. In addition community links to local NGOs and International organisations ensured risks to human rights in this isolated region were disseminated to a national and international audience.

In December, citing rising tensions in the region and risks to species such as the brown-headed spider monkey the Ecuadorian Government rejected the mining companies Environmental Impact Assessment.

This is a clear example of 'awareness raising' as information generated by projects supported by the Darwin Initiative allows authorities to base decisions on environmental information.

As the PI of the PRIMENET project I wish to extend my utmost respect for community members and local governmental representatives that have endured real hardship in standing up for a sustainable future in the face of intimidation and threat.

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

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2006/07

Project summary	Measurable Indicators	Progress and Achievements April 2006 - March 2007	Actions required/planned for next period
<p>Goal: <i>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve</i></p> <p><i>The conservation of biological diversity,</i></p> <p><i>The sustainable use of its components, and</i></p> <p><i>The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</i></p>		<p><i>Data generated by the PRIMENET project contributed to rejection by the Ecuadorian government of the Environmental Impact Assessment for a large proposed open cast copper mine in this biodiversity hotspot. This work was highlighted in the Darwin Initiative CEPA review report as an example of 'best practise'.</i></p>	<p><i>(do not fill not applicable)</i></p>
<p>Purpose To conserve 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.</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>There has been a great deal of success in achieving outputs and in conserving habitat in NW Ecuador with the rejection of the EIA of a 4000 ha open cast mine.</p> <p>Links from communities to NGO and governmental organisations have played a key role to which PRIMENET has contributed.</p>	<p>Second parabiologist training course at lowland site (Northern Buffer Zone)</p> <p>Launch of regional GIS database.</p> <p>Community education programme in collaboration with parabiologists.</p>
<p>Output 1. Network established to monitor primate status and habitat using participatory field surveys and trained village-level parabiologists.</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>Partner institutions effectively carrying out primate surveys and habitat assessments. There is also a high degree of integration with parabiologists and their communities. Initial parabiologist training course extremely popular and 25 parabiologists already completed course. Field teams now integrating with parabiologists to undertake habitat and primate surveys and educational dissemination. Reliable indicator.</p>	

<p>Activity 1.1 Robust Field survey data (Field reports) (Yrs 1,2,3).</p>	<p>Field reports received on time from all partners</p> <p>Primate surveys (Murcilargo Blanco) - A primate field study has been completed providing the first data regarding population status and characteristics, activity patterns and habitat preferences of the three primate species inhabiting the study area, <i>Alouatta palliata</i>, <i>Ateles fusciceps</i> and <i>Cebus capucinus</i>. Ongoing surveys forming the theses of two Ecuadorian BSc students currently underway as part of the community educational program (see output 3). [field report in supplementary material CD]</p> <p>Habitat assessment (Corporacion Botanica Ecuadendron) – Draft Habitat assessment protocol complete. Site 2, a lowland site, has been identified for habitat assessment (Febres Cordero). Field sampling carried out in collaboration with parabiologists and botany students (Jan – Mar 07). Collected samples are currently being identified at the Herbarium. Successful field trial of innovative aerial habitat assessment methodology – to form basis of Earthwatch proposal in exit strategy (see output 7 below)</p> <p>Partners successfully working alongside parabiologists trained in September 2006 to collect habitat data and primate data from communities in the buffer zone.</p> <p>Bournemouth University expedition (Summer 2008) to work alongside parabiologists to establish a camera trapping network to expand monitoring to other charismatic mammals and to investigate rapid habitat assessment methods.</p>
<p>Activity 1.2. Field data published to database & GIS updated biannually (Yrs 2,3) and published to internet website.</p>	<p>The large scale GIS map of the buffer zone of the Cotocachi-Cayapas Ecological Reserve is nearing completion and to be displayed on website in 2007. Analysis of LANDSAT imagery highlighted a 56% reduction in forest cover from 1987 – 2001 in the 15km buffer zone (see map) (BSc thesis project June 2006). The GIS dataset currently in use to carry out an estimate of remaining primate populations (BSc Geography Undergraduate project, University of Sussex) and to carry out a population viability assessment using VORTEX (MSc thesis in Primate Conservation, Oxford-Brookes).</p> <p>Bespoke PRIMENET database under development by IT department of Life Sciences at the University of Sussex to provide standardised long-term storage of primate and mammal</p>

		observations. A web-based front end allows input of observations by parabiologists and field researchers. A linkage to 'google map' allows users instantaneous display of observations in a map format. The database is currently under testing and will be expanded to allow web-based queries. Access to the database will be free to conservation and governmental organisations.
Output 2. GIS database established at Los Cedros Biological Reserve.	Data from field surveys updated to database by trained local staff.	Database established and maintained with updated information from field surveys by reserve staff. 3 day DISTANCE sampling course provided by PI to Reserve Staff, International Conservationists and PRIMENET students (September 2006).
Activity 2.1. GIS database published to internet showing distributions of primates and habitat status (Yrs 2,3).		GIS database for the Los Cedros Reserve complete established at the reserve and up to date, reserve staff trained in data input and database maintenance.
Output 3. Public awareness campaign focusing on primate conservation disseminated via network.	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.	The parabiologist training course (September 2007) included participatory sessions to identify the causes of unsustainable behaviour; some were community specific and ranged from negative impacts from mining and palm oil plantations to uncontrolled tourism. Educational material has been published, and disseminated nationally, regionally and at village level.
Activity 3.1. Publication of material for environmental awareness campaign (Yrs 1,2,3).		In year 2 of the project the following educational material was produced: 2.000 books "Guía de campo de los mamíferos del Ecuador" (Field guide to the mammals of Ecuador. It includes relevant information about mammals of Ecuador, with special emphasis on the primates in north-western Ecuador. Some copies of this book will be distributed free of charge to the parabiologists, local communities, and people working on the PRIMENET project. 3.000 PRIMENET magazines that include information about the Chocó region, biodiversity, mammals, primate conservation, threatened species, conservation, environmental problems and a comic. All 3000 magazines will be distributed free to communities in the study region in the coming year as part of the educational outreach.

		<p>3.000 stickers of the PRIMENET project.</p> <p>283 T-shirts, with a new design of the PRIMENET project.</p> <p>The special issue of Terra Incognita, posters and T-shirts printed last April have been distributed to communities. The magazine and stickers are currently in print and will be distributed over the coming year.</p> <p>Between November and December 2006 communities contacted with the aim of carrying out our Environmental education program. The program will include similar topics to those covered in the Parabiologist training course: biodiversity, conservation, primates, threatened species, environmental problems, and natural resources. Communities targeted are: Apuela. Brillasol. Chontal alto & bajo, Cristóbal Colón, Cuellaje, García Moreno, Junín, Magdalena alto & bajo, Peñaherrera.</p> <p>This program is in execution, and will continue in the southern zone until July 2007 and then move to the northern zone (Sept to Dec 2007)</p>
<p>Output 4. Masters level training for Ecuadorian Partners.</p>	<p>Primate Survey Principal investigator (PI) qualifies in MA in Participation, development and social change. Botanics Research Assistant (RA) qualifies in MSc Botany (Forest Ecology).</p>	<p>Masters programmes proceeding as planned. Reliable indicator.</p>
<p>Activity 4.1. MA certificate from IDS, UK (Yr 3). MSc certificate in Forest Ecology from San Francisco University, Ecuador (Yr 3).</p>		<p>MA in participation and social change at the Institute of development studies. Karina Paredes has registered for the MA beginning in September 2007.</p> <p>MSc in Forest Ecology (Nelson Miranda - Botanist) – the student successfully completed year 1 and is currently embarking on his fieldwork thesis project (1 year) that contributes to PRIMENET goals of habitat assessment and sustainable livelihoods (see output 7)</p>
<p>Output 5. Training centre for Parabiologists and local staff established at Los Cedros</p>	<p>Training Centre materials established by Yr 2 and training underway of local staff and parabiologists (Yrs 2,3).</p>	<p>Training material for 100 hour parabiologist training course complete, 25 parabiologists trained to date.</p>

Biological Reserve.		
Activity 5.1. Training course developed (Yr 1) and teaching materials published (Yr 2). DVD course 'training the trainer – running a parabiologist training course' complete (Yr 3).		Parabiologist training materials (Text, DVD, presentations) completed, reserve staff trained in practical modules of the parabiologist training course (CD containing parabiologist training materials and DVD introducing field primate survey methods attached). Material to be expanded and deployed in two more training courses.
Output 6. Parabiologists trained as certified primate and habitat ecologists.	Up to 20 community members trained as certified parabiologists (Yrs 2,3).	High degree of interest in parabiologist training 25 parabiologists from 6 communities trained in course 1.
Activity 6.1. Up to 20 parabiologists receive Parabiologist certificate 'Forest ecology and field survey methods'.		Parabiologist training course (100 hours) completed with 25 participants from 6 communities of the Southern Buffer Zone of Cotacachi-Cayapas Ecological Reserve attending and successfully completing course (11th – 15th September 2006). Two more parabiologist training courses to follow.
Output 7. Sustainable Livelihoods	Parabiologists supported long-term as per exit strategy. Other sustainable livelihood programmes identified and initiated.	Proposals submitted to Earthwatch as one exit strategy to maintain and expand the monitoring program. Community exchange programme externally funded to disseminate local knowledge in sustainable livelihoods between communities. MSc thesis (Botany): Potential for sustainable forest use in four communities in NW Ecuador, Imbabura Province. Questionnaires and interviews to identify the value of forest to communities will be followed by a field inventory using the habitat assessment methods developed in PRIMENET to identify plants with potential commercial value using sustainable extraction criteria.
Activity 7.1. Ongoing national and international funding after Yr 3.		Proposal submitted to Earthwatch 'SURVIVE – climate change, canopies and charismatic mammals' with aim to maintain primate surveys and expand to monitor other threatened mammals using networks of camera traps from June 2008. Habitat assessments to continue to develop aerial taxonomy methods. Rainforest Concern has committed £10 000 to support the initiative (proposal attached).
Links between Para-biologists and other sustainable livelihood projects		

established.	<p>Inter-community training initiative received funding from the Network for Social Change (£2104) to allow community exchanges and knowledge/skills transfer. Members of communities with differing expertise will host workshops for other communities to explain sustainable livelihood options. First exchange programme due in May 2008 and will involve workshops in Cristobal Colon (expertise in community sustainable forest management) and Chontal (expertise in community ecotourism) – summary of exchange programme attached.</p>
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Annex 2 Project's full current logframe



LOGICAL FRAMEWORK

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<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> <p>the conservation of biological diversity,</p> <p>the sustainable use of its components, and</p> <p>the fair and equitable sharing of benefits arising out of the utilisation of genetic resources</p>			
<p>Purpose –</p> <p>To conserve 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.</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>Educational material published & disseminated to communities via network.</p>	<p>Network members remain viable and committed.</p> <p>Effectiveness of network and educational programme proven and disseminated to policymakers leading to long-term support by government and NGOs.</p>
<p>Outputs</p>			
<p>Network established to monitor primate status and habitat using participatory field surveys and trained village-level parabiologists.</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><i>Robust Field survey data (Field reports) (Yrs 1,2,3).</i></p> <p><i>Field data published to database & GIS updated biannually (Yrs 2,3) and published to internet website.</i></p>	<p>Parabiologists living in communities are able to provide reliable biological field data following appropriate training.</p>
<p>GIS database established at Los Cedros Biological Reserve.</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>Sufficient training and support for local staff in maintenance of database.</p>
<p>Public awareness campaign focusing on primate conservation disseminated via network.</p>	<p>Causes of unsustainable behaviour identified through participatory methods and public awareness material developed and printed (specific to indigenous Awa, Chachi,</p>	<p>Publication of material for environmental awareness campaign (Yrs 1,2,3).</p>	<p>Material developed is sufficiently targeted and reaches and positively influences</p>

	Afro Ecuadorian and Mestizo communities); up to 5000 copies per year distributed.		local communities.
Masters level training for Ecuadorian Partners.	Primate Survey Principal investigator (PI) qualifies in MA in Participation, development and social change. Botanic Research Assistant (RA) qualifies in MSc Botany (Forest Ecology).	MA certificate from IDS, UK (Yr 3). MSc certificate in Forest Ecology from San Francisco University, Ecuador (Yr 3).	Candidates for PI and RA positions sufficiently qualified to undertake and complete MA and MSc courses.
Training centre for Parabiologists and local staff established at Los Cedros Biological Reserve.	Training Centre materials established by Yr 2 and training underway of local staff and parabiologists (Yrs 2,3).	Training course developed (Yr 1) and teaching materials published (Yr 2). DVD course 'training the trainer – running a parabiologist training course' complete (Yr 3).	All partners contribute relevant expertise to developing training material.
Parabiologists trained as certified primate and habitat ecologists.	Up to 20 community members trained as certified parabiologists (Yrs 2,3).	Up to 20 parabiologists receive Parabiologist certificate 'Forest ecology and field survey methods'.	Sufficient interest from within community members to become parabiologists.
Sustainable Livelihoods	Parabiologists supported long-term as per exit strategy. Other sustainable livelihood programmes identified and initiated.	Ongoing national and international funding after Yr 3. Links between Para-biologists and other sustainable livelihood projects established.	Parabiologist network provides rigorous scientific data and disseminated to policymakers leading to long-term support by government and NGOs.
Activities			
<i>Workshops</i>	<p><i>Yr 1 Project planning (2 wks - June 05). Training Parabiologists - methodological Review (2 wks May 06).</i></p> <p><i>Yr 2 Field methods - participatory surveys, plant inventory & rapid habitat assessment (2 wks May 07).</i></p> <p><i>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.</i></p> <p><i>Participatory methods and conservation networks – Parabiologist workshop (2 wks Apr 08).</i></p>		
<i>Training courses</i>	<p><i>Yr 1. Wilderness First Aid (Red Cross, Quito) – for field survey staff (Jul 05).</i></p> <p><i>Database management - local staff training 'Survey data management' (2 wks May 06).</i></p> <p><i>Yr 2. Primate survey methods and environmental education for parabiologists ('Forest ecology and field survey methods') (2wks Sept 06).</i></p> <p><i>Yr 3. Primate survey methods and environmental education for parabiologists ('Forest ecology and field survey methods') (2wks Jun 07).</i></p>		
<i>GIS database</i>	<i>Yr 2. GIS format database established and transferred to Los Cedros Biological Reserve (Apr 07).</i>		

	<i>Yrs 2- 3. Data from field surveys updated to GIS database – GIS published to web and disseminated to policymakers (May 07+).</i>
<i>Field Research programme</i>	<p><i>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.</i></p> <p><i>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</i></p> <p><i>Yr 3. Ongoing collection of field data and support for parabiologists through expeditionary surveys and habitat assessments (14 days/month for 8 months).</i></p>
<i>Manuals Training Material Community education material</i>	<p><i>Yr 1. Develop & publish community public awareness material (5000 copies) (Apr 06).</i></p> <p><i>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 & publish Yr 2 community public awareness material (5000 copies).</i></p> <p><i>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).</i></p>
<i>Publicity material Publications</i>	<p><i>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.</i></p> <p><i>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)</i></p>

Annex 3 onwards – supplementary material (optional)

Supplementary material associated with this report

1. Parabiologist training course CD: contains all presentation material including text and power point presentations plus contact details of parabiologists
2. Parabiologist course text and sample certificate of completion
3. Introduction to distance sampling manual (Based and with permission from St Andrews University DISTANCE sampling course)
4. Copy of the 'Field guide to mammals of Ecuador'
5. T-shirt with PRIMENET design for 2007
6. CD containing:
 - 1) Copies of research project theses completed with PRIMENET

PRIMATE LITERATURE

a. Demography, activity patterns and habitat preference of three species of primates (*Alouatta palliata*, *Ateles fusciceps* & *Cebus capucinus*) in a Cloudforest of NW Ecuador.

BSc thesis. Pontifica Universidad Catolica del Ecuador Facultad de Ciencias Exactas y Naturales Escuela de Biología, Quito, Ecuador. María Mercedes Gavilanez-Endara.

b. Census of the brown-headed spider monkey (*Ateles geoffroyi fusciceps*) in the Andean cloud forest of the Los Cedros Biological Reserve, Ecuador.

MSc thesis. University of Oxford-Brookes MSc in Primate Conservation. Fionn Magnusson.

c. A Population Survey of the Southern Mantled Howler Monkey (*Alouatta palliata aequatorialis*) within the Los Cedros Biological Reserve, North West Ecuador.

MSc thesis. University of Oxford-Brookes MSc in Primate Conservation. Vicky Huges.

d. Population reinforcement feasibility study for the brown headed spider monkey (*Ateles geoffroyi fusciceps*) at the Los Cedros Reserve, Ecuador.

MSc thesis. University of Oxford-Brookes MSc in Primate Conservation. Sam Shanee.

HABITAT LITERATURE

e. Pioneer species ecology: co-existence and ecological differences amongst contrasting species

MSc Thesis. University of Wales. Austin Haffenden

f. Reforestation feasibility study around the Los Cedros Biological Reserve North-Western Ecuador

MSc thesis. University of Oxford-Brookes MSc in Primate Conservation. Noga Shanee.

2) Proposals developed as part of the exit strategy

a) Leverhulme trust application

b) Earthwatch

3) Draft habitat Assessment protocol (Spanish)

4) Field report (Primate Survey and education)

7) DVD primate survey methods (English & Spanish)

Checklist for submission

	Check
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.	X
Is your report more than 5MB? If so, please advise Darwin-Projects@ectf-ed.org.uk that the report will be send by post on CD, putting the project number in the Subject line.	
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.	X
Have you completed the Project Expenditure table?	X
Do not include claim forms or communications for Defra with this report.	