Darwin Initiative Annual Report

Important note:
To be completed with reference to the Reporting Guidance Notes for Project Leaders – it is expected that this report will be about 10 pages in length, excluding annexes
Submission deadline 30 April 2008

Darwin Project Information

Project Ref Number	15-026
Project Title	The Bornean Wild Cat and Clouded Leopard Project
Country(ies)	Malaysia
UK Contract Holder Institution	Global Canopy Programme, Oxford
UK Partner Institution(s)	Wildlife Conservation Research Unit, University of Oxford. Royal Society South East Asian Rainforest Research Project
Host country Partner Institution(s)	Institute for Tropical Biology and Conservation, Universiti Malaysia, Sabah
Darwin Grant Value	£ 229,744
Start/End dates of Project	1st June 2006 -1st October 2009
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1st April 2007 to 31st March 2008. Annual report number 2
Project Leader Name	Katherine Secoy
Project website	www.globalcanopy.org
Author(s), date	Joanna Ross, Andrew Hearn, Katherine Secoy and Henry Bernard. March 2008

1. Project Background

Bornean tropical forest contains a guild of five felid species: clouded leopard, bay cat, flat-headed cat, marbled cat and leopard cat. One is endangered, three threatened, and their presumed primary habitat is rapidly being lost and/or altered in the region. The behavioural ecology of none is well-known, and the impact of forest destruction and management on each of these species is obscure. This project, based at Danum Valley, an area of protected primary lowland Dipterocarp rainforest within a 9730 km^2 timber concession - The Ulu Segama-Malua Forest Reserve and Tabin Wildlife Reserve (TWR), a predominantly logged lowland Dipterocarp forest surrounded by oil palm plantations, both located in Sabah, Malaysian Borneo (Fig. 1.) will provide base-line data regarding the behaviour and ecology of the five species of Bornean wild cat and their responses to selective logging, upon which informed conservation and management decisions can be based.

Additional aims are to provide conservation research training to host country scientists and students, by means of mammal field-research courses and the intensive training of a postgraduate from the Institute for Tropical Biology and Conservation (ITBC) at the University of Malaysia, Sabah. We will increase awareness of the Bornean wild cats in Sabah by producing and disseminating wild cat-specific environmental education materials. Questionnaire surveys will be conducted throughout the communities surrounding the Tabin Wildlife Reserve, to assess the potential level of hunting/trade of the wild cats and their prey and to assess local people's knowledge, beliefs, attitudes and perceptions about conservation. Project findings will be used to provide recommendations for a Bornean wild cat conservation action plan, and presented at a Bornean wild cat conservation workshop at the end of the project.

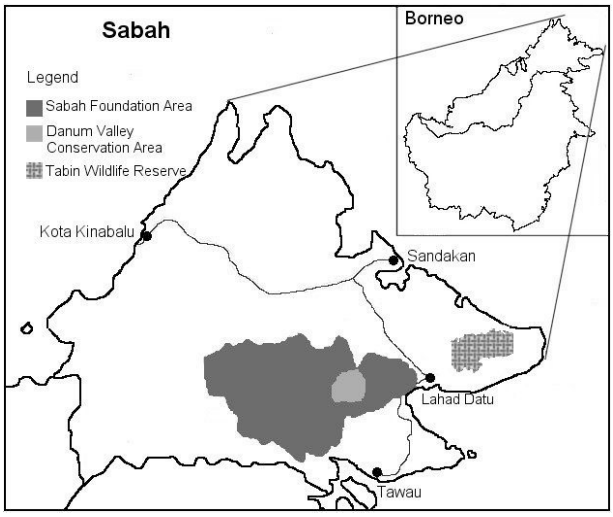

Fig. 1. Map of Sabah, Malaysia, highlighting the two study areas.

2. Project Partnerships

The partnership between the Global Canopy Programme (GCP) and the Institute for **Tropical Biology and Conservation (ITBC)** continues to strengthen and improve. The ITBC, through the strong support of its director, Professor Maryati Mohamed, continues to provide excellent logistical support and played an active role in delivering the training course, with our collaborator, Dr. Henry Bernard leading a module on small mammal trapping which is his speciality. As a result the courses are now oversubscribed. Daniel Pamin, who is currently receiving 3 years on-the-job training, has recently formally registered to read for a PhD within the ITBC, studying the conservation genetics of Borneo's wild felids. The ITBC have provided supplementary funding (to the value of RM 50,000.00 from a research grant received from the Ministry of Higher Education, Malaysia which was awarded to Dr. Henry Bernard) in order for this to be possible and the initial findings of Daniel's research will feed into the overall outcomes of the project as a whole. In addition, we are currently investigating the possibility of providing additional experience and training for some of the recent conservation biology graduates from ITBC, this is likely to be in the form of volunteer field assistant positions. Short term research projects (< 3 months) may also be developed under the umbrella of the Bornean Wild Cat and Clouded Leopard Project which could be offered to final year undergraduates of the Conservation Biology course for their final year research projects.

The partnership with the **Sabah Wildlife Department** has grown much stronger and we have had several promising meetings with the Department's senior veterinarian, Dr. Senthival Nathan. This relationship is crucial to obtain additional permits for the 'live trapping programme'. Dr. Nathan has kindly provided the project with veterinary equipment and the drugs required for the immobilisation of the felids. Dr. Nathan is the director of the newly opened Lok Kawi Wildlife Park in Sabah and we are exploring the possibility of displaying educational posters there.

Additional partnerships include those with **Yayasan Sabah** and the UK's **Royal Society South East Asian Rainforest Research Project**, both of whom continue to provide excellent logistical support, especially regarding the implementation of the training course. Continued support and advice from Professor David Macdonald, **Wildlife Conservation and Research Unit**, (WildCRU), University of Oxford ensures the scientific quality of the project remains high. This relationship continues to strengthen with the implementation of a WildCRU funded complimentary project in contrasting habitat in Kalimantan, Indonesian Borneo. Both principal investigators are currently working with Professor Macdonald to explore the possibility of undertaking DPhils within the WildCRU, on the completion of this project.

A new partnership is being developed with Sabah based NGO **Hutan**. Hutan are currently carrying out biodiversity and monitoring surveys within the riverine forest of the Sungai (river)

Kinabatangan. We are currently exploring the possibility of training Hutan employees in the methodology of camera trapping to allow comparative camera trapping studies within the riverine habitats of the Sungai Kinabatangan.

3. Project progress

3.1 Progress in carrying out project activities

Output 1. Recommendation report: Data collection to feed into the recommendation report is progressing well. Data from the camera trapping proved to be of high enough quality to enable the easy identification of individual clouded leopards and so allow the implementation of a survey utilising a capture-mark-recapture framework. This has provided the first robust density estimate for clouded leopards on Borneo and indeed the first for this species. Data from the camera trapping has proved to be of high enough quality to enable the easy identification of individual clouded leopards and so allow the implementation of a survey utilising a capture-mark-recapture framework, see appendix 3H for map detailing camera layout and effective survey area. This survey was carried out in good quality logged forest, where 12 clouded leopards have been identified to date, and comparative surveys are now underway to obtain densities from forest of differing qualities. A further 5 clouded leopards have so far been identified in the primary forest. We continue to collect data regarding relative densities and habitat use of the other felid species. Live trapping has now begun in earnest and on 31st January 2008 we successfully trapped and radio collared a female adult clouded leopard; this is the first time this species of clouded leopard has been radio collared. We are successfully obtaining data from her and building a picture of habitat use and home range size that will feed directly into the recommendation report, (see Appendices 3a, b and C for images of the collared clouded leopard, live traps in the field and Principle investigators tracking the clouded leopard).

As previously discussed with, and agreed by the Darwin Secretariat, research at Tabin Wildlife Reserve has been postponed until work at Danum is more complete. There remains a risk of equipment theft from Tabin and at this stage of the project this would impact severely on research activities. In addition, due to the low photo-capture probabilities of the felids, research is more efficient with all cameras operating at any given site. The majority of the forest at Tabin is heavily degraded logged forest adjacent to oil palm plantations and research in these habitats will allow for direct comparisons with the current research in primary and enriched logged forest. However, these habitats including a palm oil plantation, are also represented within, and adjacent to, the Ulu Segama-Malua Forest Reserve in Danum. We are currently investigating the possibility of working here as a replacement to Tabin Reserve, should research at Tabin be deemed unfeasible. Indeed, this could be scientifically advantageous as any differences found can more accurately be attributed to habitat affects alone rather than inherent geographical differences between the two areas or as a consequence of human activity.

Output 2. Mammal field course: The first two mammal field research techniques training courses were held in June 2007. These were very successful, and with some supplementary funding from ITBC it was possible to train 30 undergraduate students, 2 post-graduate students and 1 lecturer, 13 people more than we had planned to train by this point. Daniel Pamin partook in the first course and performed an active teaching role in the second. We will increase his level of responsibility for the next 2 courses. Daniel's participating in these courses and the training of a lecturer - Ms. Azniza Mahyudin, from ITBC ensures the transfer of skills necessary for the continuation of the course, beyond the scope of the Darwin project. In addition, the ITBC has decided to adopt the course onto their Conservation Biology BSc syllabus. Ms. Azniza Mahyudin has been invited to contribute to the teaching during the third and fourth training courses. With her involvement, the dissemination of materials from the training course into the Conservation Biology curriculum would be facilitated. These materials will be incorporated into the Field Work module, which Ms. Mahyudin currently coordinates.

The next 2 courses are scheduled for July 2008, when we plan to train a further 30 students. These courses are now oversubscribed.

Output 3. Development and production of wild cat education materials: Bilingual posters in English and Bahasa Melayu have been produced using some of the more superior images from the camera efforts to date. In addition, we have provided the management of the Danum Valley Field Centre (Yayasan Sabah) high quality photographic examples of the mammals found within the Danum Valley which will enable them to produce educational posters for display at the field centre and to enhance their current environmental education activities. Laminated field guides to some of the footprints of the more common mammals have been produced and were used to great success on the training courses (Appendix 3D). These guides will be donated to both ITBC and the environmental education centre at Danum Valley upon project closure. A poster describing the project and presenting findings to date has also been displayed within ITBC (Appendix 3E). We are currently liaising with The Clouded Leopard Project, based at Point Defiance Zoo and Aquarium, Tacoma, USA regarding the feasibility of extending their existing education programme to Borneo, in particular the distribution of a clouded leopard themed story book. A senior staff member from the Clouded Leopard Project hopes to visit us during a trip to Borneo in early September to discuss the best way forward. This would be possible within the current budget. In addition, the GCP is considering working toward raising additional funds for cartoon based educational boards, locations for display of these boards are yet to be identified, but may include the newly opened Lok Kawi Wildlife Park in Sabah, where a captive Bornean clouded leopard is held and is on show to the public (see Appendix 3F for examples of previous education boards the GCP has developed).

Output 4. Hunting/environmental awareness survey: This remains to be a sensitive issue with the wildlife department, who are reluctant to give permission due to potential conflicts with local communities. We are in discussions with ITBC to determine if this is a suitable topic for an undergraduate BSc or MSc project. The heightened involvement of a local student may be more agreeable to the wildlife department and also less intimidating to local villagers. Project activities continue to provide evidence regarding hunting activities within the Ulu Segama-Malua Forest Reserve. The principal investigators have written two reports to date regarding these hunting activities and these have been sent to both the Manager of the Danum Valley Field Centre and the Director of Yayasan Sabah, with copies sent to ITBC. In response to these reports and other recent incidents in the area many of the locked gates across the logging roads have had locks changed and access to keys has been very much reduced. Yayasan Sabah currently run anti-poaching patrols and these can now be concentrated in areas of known poaching activity.

3.2 Progress towards Project Outputs

Overall good progress is being made towards the project outputs and we feel confident that stated goals will be met by project closure. We continue to gather unique data at a satisfactory rate and our understanding of these cats' ecology continues to advance, so furthering our capacity to advise policy makers and forest managers. Thus far we have obtained the first scientifically robust density estimate for the Bornean clouded leopard in one type of forest (enriched logged) and work is underway to achieve comparative densities before project termination. Over 15,000 images of wildlife (Examples in Appendix 3G) have been accumulated and these exclusive photographs have enabled production of cat specific posters and the wide range of elusive and rare species also photographed have enabled the production of a mammal information poster by the manager of Danum Valley Field Centre. It is still early days regarding the live trapping programme; however, it is evident that the cats have a low capture probability. To raise the effectiveness of our trapping efforts we are using live traps of differing size and design and will shortly be baiting with a range of electronic trapping lures. Should we be unsuccessful with the live trapping we will nonetheless have data regarding habitat use and densities derived from the camera trapping programme which will also be used to advise the wildlife department and land managers. Subject to funding there is the potential to extend the project to allow the continuation of the live trapping programme. To date 33 young Malaysian scientists have been trained through the Mammal Field Research Techniques course; this is over half the expected final number of trainees. A further 30 will be trained by

the end of July and an additional 30 next year, making it highly likely that the stated output of at least 60 trained scientists be exceeded by the end of the project.

3.3 Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Total planned from application
Established codes							
5	1 UMS/ITBC Malaysian postgraduate will be selected as our project counterpart, employed as a field assistant for the duration of the project and will receive extensive training in mammal field research techniques.	1	1			1	1
7	Educational leaflets & posters describing Bornean wild cats	4				4	
8	2 principal researchers: 39, 48, 48, and 8 weeks during financial years 06/07, 07/08, 08/09, and 09/10 respectively	30 weeks	48 weeks			78 Weeks	87 weeks (NB project had a delayed start date and this time will be made up at the end of the project)
8	Project manager: 1 week 06/07 and 09/10.	1 week				1 week	2 weeks
8	Scientific advisor: 1 week in 06/07 and 09/10	1 week				1 week	2 weeks
14A	Minimum of three seminars at Danum presenting project findings.	2	2			4	3
14B	Presenting findings at relevant conferences	2	2			4	2
15B	Publicity articles in University and Sabah institution magazines.	1				1	2
16A	Annual "Canopy Fellows Newsletter" and bulletins on GCP website.	5	4			9	6
16C	What's up newsletter circulation GCP Annual Report Canopy Fellows Newsletter GCP website IUCN Cat Specialist Group 'Project of the Month;	1000 1000 1000 40,000 /month	1,000 60,000			1000 1000 2000 100,000	
23	Financial outputs	£2,500	£12,100 (Including pledge of $4000)			(circa) £14,600	£4,421.03
New -							

Project specific measures							

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

Table 2 Publications

Type * (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
GCP Website	Canopy Cats	Global Canopy Programme	www.globalcanopy.org	In kind
GCP Updates	Updates from the Field	Global Canopy Programme	John Krebs Field Station, Wytham, Oxford, OX2 8QJ	In Kind
Poster*	"*Bornean Wild Cats and Clouded Leopard Project*" Andrew Hearn, Joanna Ross and Daniel Pamin, 2007	Global Canopy Programme	John Krebs Field Station, Wytham, Oxford, OX2 8QJ	In Kind
Poster*	"*Felid abundance, activity and habitat use in a tropical forest in Sabah, Malaysian Borneo*" Andrew Hearn, Joanna Ross and Daniel Pamin, 2007	Global Canopy Programme	John Krebs Field Station, Wytham, Oxford, OX2 8QJ	£60
Education Boards*	"*The Wild Cats of Borneo: Kucing Liar Borneo*" Andrew Hearn, Joanna Ross and Daniel Pamin, 2007	Global Canopy Programme	John Krebs Field Station, Wytham, Oxford, OX2 8QJ	
Field Guide *	Andrew Hearn, Joanna Ross and Daniel Pamin, 2007	Global Canopy Programme	John Krebs Field Station, Wytham, Oxford, OX2 8QJ	

3.4 Progress towards the project purpose and outcomes

We continue to further our knowledge of Bornean wild cat ecology through the camera trapping successes. Despite the early stage of the radio tracking programme this is providing invaluable data on home range size and thus the area of forest required by a clouded leopard, data that can be directly used to better protect these charismatic cats, through suggested modifications in forest management practices. The capacity for mammal research amongst young Malaysian scientists has already been increased; all students indicated that the core components of the training course – camera trapping and radio tracking – were new to them and we received some promising responses:

"*I had heard about these techniques but had never been taught them*"

"*I knew these techniques existed, but have not had the chance to understand them until now*"

"*Both camera trapping and radio tracking techniques were new to me. I'm having a lot of fun learning them as well*"

"*Previously I was unaware of the ethics involved with trapping and handling animals*"

One trainee has progressed to read for a masters in Conservation Biology, applying the radio tracking techniques learned through the course to the study of fruit bats. Daniel Pamin's PhD centred on the conservation genetics of Borneo's wild cats is another example of increased capacity and will help to attain legacy beyond the capacity of the Darwin funded project.

Awareness has been raised through the production of posters and also the training course, feedback from several students during the course indicated a general lack of knowledge about Borneo's mammals and current threats. For example, most students perceived logging as a threat, but several were unaware that fire and the illegal pet trade also pose significant threats in some areas.

> "*I thought I was aware of all the threats faced by Borneo's mammals, but the pet trade issues really surprised me*"
> "*Before [attending this course] I did not know that oil palm plantations are such a serious problem for wildlife*"
> "*Now I know there are 5 cat species in Danum and there are no tigers in Borneo*"
> "*This kind of programme should be organised not only for university students, but also for school students*"

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

Malaysia is a signatory country to the Convention on Biological Diversity, with stated obligations to:

1. Determine the status and conservation needs of endemic or threatened species and the impact of current forest management practises on these species
2. Develop and implement conservation strategies for endemic and threatened species for global or regional application.

We continue to further our understanding of the ecology, status and conservation needs of the Bornean Wild cats. These data will feed directly into management recommendations for Sabah and thereby will aid Malaysia in fulfilling her commitments under the Convention on Biological Diversity. In addition, given that the clouded leopard is an umbrella species, appropriate management procedures to ensure suitable clouded leopard habitat is retained and protected, will also be applicable to other, smaller species so improving the general biodiversity of these areas.

On 21st and 22nd September 2007 the IUCN cat specialist group held a workshop in Oxford, UK which both principal researchers attended. The preliminary findings from this project provided the foundation for the reassessment of the conservation status of the five felid species found on Borneo and the subsequent reclassification (awaiting final evaluation for IUCN Red list 2008) of the flat headed cat and the Bornean sub species of clouded leopard (both previously classified as Vulnerable, now Endangered).

4. Monitoring, evaluation and lessons

Project monitoring and evaluation: The project is monitored and progress evaluated through monthly update reports submitted by the principal investigators to both the Global Canopy Programme and ITBC. In addition, meetings are held approximately once each month between the principal investigators and the local collaborator to discuss project progress and to highlight any areas of concern. Furthermore, frequent email contact between principal investigators, GCP and ITBC ensures any problems are solved as quickly as possible. Site visits from the project manager, scientific advisor and local collaborator help ensure optimum progress is being made. In country project expenditure is submitted to the GCP each month when it is compared to the budget to make certain the project is keeping to budget.

Indicators of achievement: The accumulation of data that will feed directly into the recommendation report is constantly monitored and data are analysed frequently. Spreadsheets of photographic data are kept up to date and a map detailing locations of the collared clouded leopard is updated daily, or whenever new data is available. Feedback from course participants was used to gauge success and usefulness of the course in conjunction with conclusions from ITBC; slight modifications for the next course have been made accordingly.

Lessons: The camera based capture-mark-recapture survey in the logged forest of the Ulu Segama-Malua Forest Reserve was completed smoothly and with very few logistical problems. The replication of this survey in the primary forest Conservation Area is proving more challenging than anticipated, simply due to the logistics of covering a large enough area of pristine forest with cameras. There are very few trails in the Conservation Area and so accessing the remote interior is indeed challenging. This task, however, is achievable, and to date half the camera trap pairs are in place, it is simply taking longer than anticipated. However, there remains sufficient time to complete the survey in the primary forest and to conduct comparative surveys in areas of differing habitat. If we are successful in raising additional funds we will also purchase a quad bike, which will make it significantly easier to reach more remote parts of the forest.

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

Training course schedule: The schedule for the training course has been included, appendix 3I

Daniel Pamin: Daniel's C.V. has been included as appendix 3J. Daniel is currently employed by the ITBC as a direct result of this project. Previously he was employed by the ITBC in a similar fashion within the capacity of a different project. His reading for a PhD within the ITBC makes it more likely that his employment will continue beyond the scope of the current project. Furthermore, his skills acquired through his on-the-job training (especially camera trapping and radio tracking) will make him a lucrative candidate for a more permanent position there, as these skills are somewhat lacking within the ITBC at present.

Relationship with GCP canopy access course, DI project 13-023: Daniel and several staff at Danum Valley were trained in Basic Canopy Access Proficiency techniques, during Darwin Initiative funded canopy access training courses in 2005/6/7. These skills have been extremely beneficial during the pilot study of canopy camera trapping, as we would otherwise have been unable to access the canopy to place cameras.

6. Other comments on progress not covered elsewhere

The Global Canopy Programme has been successful in raising additional funds for more camera traps and other field equipment; an additional £4,100 has been secured this financial year from the International Fund for Nature Conservation, £6000 from the WildCRU and $US4000 from the Point Defiance Zoo & Aquarium Conservation Fund/Clouded leopard Project. The GCP continues to work to secure supplementary funds for additional equipment and currently awaits the outcome of submitted applications.

7. Sustainability

Upon completion of the Darwin Initiative funded project ongoing work will be lead by the ITBC. The donation of camera traps and radio tracking equipment will facilitate this work and will also enable the training courses to be carried forward beyond the scope of the Darwin funded project. The awareness aspect of the training course i.e. the section of the course covering threats and species in which research is lacking has helped to generate an interest in mammal studies amongst the conservation biology students at ITBC. Feedback from the course indicates that most students now have a greater desire to continue their studies in, or to follow a career path involving, mammal research after completing the course:

> "*I plan to do research on bats for my Masters degree, but I really hope there will be an opportunity to study large mammals in the future*"
>
> "*After completing this course by knowing how to safely capture and study mammals, I would like to continue studying mammals in the future*"
>
> "*I would like to shift from studying small mammals to studying larger mammals*"
>
> "*I have always been interested in mammals. Now I have more knowledge and a better idea of the methods to study them*"

Two candidates for future training positions attended the first 2 courses; one is a current lecturer Ms. Azniza Mahyudin within ITBC and the other Daniel Pamin, these two people will have the skills necessary to continue the training courses beyond the capacity of the current Darwin project. In addition, Daniel has had the opportunity to attend a Darwin Initiative funded statistics training course (DI project 16-011) at UMS so enhancing his ability to become a leader in mammal research in Sabah.

Over the past year the project has been promoted at a local level through the display of education boards at Danum Valley Field Centre and Borneo Rainforest Lodge, and a promotional poster displayed at ITBC for the visit of the Malaysian Minister for Higher Education during June 2007. In addition, the project has been promoted and early findings presented during update talks at Danum Valley to visiting academics and university groups and a yearly update presentation at the Economic Planning Unit in Sabah (the Government department who issue the research permits) which was attended by representatives of relevant bodies such as Yayasan Sabah, Sabah Wildlife Department and Universiti Malaysia Sabah and interested parties such as the Sabah Society. During December 2007 a conference and mammal conservation workshop was jointly organised by the Sabah Wildlife Department and WWF, Malaysia. Principal investigator, Joanna Ross presented a paper on the conservation status of the clouded leopard in Sabah, in which the current DI project was highlighted. At an international level the project has been promoted by email updates to all funding bodies, updates on the GCP web site and by a poster presentation featuring preliminary results at an International felid conference, in Oxford, UK during September 2007 (appendix 3K)

8. Dissemination

Initial project findings have been presented at a large mammal conservation conference on the 6th and 7th December 2007 in Sabah jointly organised by the Sabah Wildlife Department and WWF Malaysia this conference culminated with working groups where researchers and Wildlife Department representatives were able to discuss threats and suggest workable solutions to current problems. The recurring problems raised by most presenters at this conference were hunting and habitat loss. Proceedings of this conference will be published shortly.

Initial results were also presented at a yearly update talk at the Economic Planning Unit in Sabah, to which relevant bodies including the Sabah Wildlife Department, Universiti Malaysia Sabah and Yayasan Sabah were invited.

Improved education boards (appendix 3L) have also been produced and one detailing the project was displayed at Universiti Malaysia Sabah for visit of the Malaysian Minister for Higher Education in June 2007.

The target audience for our final dissemination workshop in 2009 is still being identified and will include the Sabah Wildlife Department, Yayasan Sabah, WWF Malaysia, ITBC and Malaysian and international scientists involved in felid or complimentary research in Sabah.

Continuation of project activities beyond the capacity of the Darwin funded project is currently being examined. Subject to it being deemed appropriate by host country collaborators and subject to funding, the GCP shall maintain an active role in the continuation of the project and shall maintain long term contact with ITBC to provide guidance when necessary.

Having liaised with the GCP's PR advisors, we are working to develop a press release for Biodiversity day on 22nd May 2008, to announce the project's initial results and collaring of the first Bornean Clouded Leopard. On their advice we have waited until we have had a 'peg' to pin the story to and until there is more of a substantial announcement. We will be sure to keep the Darwin Initiative informed of the story's progress and use the Darwin logo wherever possible.

9. Project Expenditure

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

Item	Budget (please indicate which document you refer to if other than your project application)	Expenditure	Balance
Rent, rates, heating, overheads etc			
Office costs (eg postage, telephone, stationery)			
Travel and subsistence			
Printing			
Conferences, seminars, etc			
Capital items/equipment Live Traps			
Comsumables including, Trap lures, batteries, bait			
Others Travel Insurance Excess Baggage Audit WildCRU Desk Fees			
Salaries (specify) Andrew Mitchell (Executive Director) Katherine Secoy (Project Manager) Andrew Hearn (Associate Researcher) Joanna Ross (Associate Researcher) Amy Hardingham (Programme Coordinator) RS Research Assistants x2 Specialist Assistants x2 Daniel Pamin (UMS Research Assistant) Henry Bernard (In country project oversight) ITBC Secretarial Support			
TOTAL			

Highlight any agreed changes to the budget and explain any variation in expenditure where this is +/- 10% of the budget.

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

During the reporting period the project has come some way towards meeting its purpose of enhancing the protection of Borneo's wild cats. Data from paired camera traps analysed within a capture-mark-recapture framework have provided the first scientifically robust density estimate for clouded leopards on Borneo. This survey was carried out in enriched logged forest within the Ulu Segama-Malua Forest Reserve and results suggest that this forest type supports a healthy clouded leopard population. During the survey six male and four female clouded leopards were identified within the study area; an additional 2 females were identified outside of the survey period on the perimeter of the study area. The density at which these cats survive is obviously imperative knowledge for any management plan as it directly affects the area of forest required for a viable population. When used in conjunction with data from areas of differing habitat quality, which will be obtained later in this project, this information will be able to guide management plans towards the enhanced protection of the Bornean clouded leopard.
Moreover, on the 31st January 2008 a female clouded leopard was successfully trapped and radio collared in the logged forest of the Ulu Segama-Malua Forest Reserve. This is the first clouded leopard to ever be collared on Borneo and indeed the first for this species. She is a young adult in prime condition, she suffered no trap injuries whilst in the trap and outwardly appeared very calm both prior to the immobilisation and on recovery. The whole procedure was accomplished very smoothly and the animal was effortlessly released at the trap site. Since the trap date we have been successful in tracking her, despite the challenging terrain and are gradually building a picture of her home range size and habitat use. These data will feed directly into recommendations regarding forest management with a view to ensuring sufficient habitat remains in the future for the survival of these enigmatic cats.

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

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

Project summary	Measurable Indicators	Progress and Achievements April 2007 - March 2008	Actions required/planned for next period
Goal: *To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve* *The conservation of biological diversity,* *The sustainable use of its components, and* *The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources*		Through the accumulation of over 15,000 camera trap images from both logged and primary forest we are obtaining novel data on the ecology of Borneo's endemic and threatened wild cats. In addition, data are also being accrued regarding other rare species and the general biodiversity and conservation value of both primary and logged forests. These data, in conjunction with radio tracking data, will directly feed into management recommendations and so aid the wildlife department in their conservation efforts.	*(do not fill not applicable)*
Purpose Threatened Bornean wild cat species better protected through an increased knowledge base, greater awareness, & through enhanced capacity for field research in Sabah	• New constructive data regarding Bornean wild cat ecology, response to habitat alteration, & threats from hunting in Sabah. • Students trained in mammal field techniques • Bornean wild cat education materials produced & utilised in environmental education programmes.	• Data from a camera trapping mark-recapture survey have provided the first robust density estimate for clouded leopards on Borneo. Information regarding relative densities of the other species has also been obtained. The first clouded leopard on Borneo has also been successfully radio collared and we are gathering valuable data from her • 33 Malaysian scientists were successfully trained during the first 2 training courses • Enhanced posters have been produced using superior images from the camera traps. Field guide to mammal footprints has been	• Camera trapping will continue to include mark-recapture surveys in primary forest and recently logged forest. Live trapping will continue. • 2 more training courses will be held during May 2008. • Principal investigators currently in discussions with The Clouded Leopard Project (CLP) regarding the extension of CLP's education programme to Borneo. GCP investigating the possibility of producing educational cartoon boards

		produced.	
Output 1. A report providing recommendations for a Bornean Wild cat Action Plan for Sabah and a project dissemination workshop	• Report peer reviewed & publication date established. Report distributed to target institutions/bodies within 6 months of project completion.	• Data upon which the final recommendation report will be based continues to be obtained at a satisfactory rate. The first robust density estimate for clouded leopards on Borneo has been obtained through camera trapping and we continue to gather information regarding the other cat species. To date we have 218 photos of clouded leopards, 21 photos of marbled cats 780 photos of leopard cats and 8 bay cat photos. Data from our radio collared clouded leopard is providing invaluable information regarding home range size. Effort is being made to trap and collar more cats, 8 large and 10 small live traps are currently in use in the field and the construction of a further 10 small traps is underway. Indicator is still deemed appropriate.	
Activity 1.1 Field research programme		• 18 months of camera trapping have successfully been completed within logged and primary forest at Danum Valley. Live trapping has begun and a female clouded leopard has been successfully trapped and radio collared. Next period will include additional mark-recapture surveys in primary and newly logged forest and the expansion of the live trapping programme with additional traps	
Activity 1.2 Wild cat Action Plan recommendation report		• The first mark-recapture survey has provided invaluable data regarding clouded leopard densities. Next period will include surveys within different habitats to allow extrapolations to be as accurate as possible. Good progress is being made with the live trapping and this will continue into the next period	
Activity 1.3 Project dissemination workshop		• The workshop is still scheduled for the end of the project and is likely to be in August 2009. Stakeholders and interested and relevant parties are being identified and will be contacted in the next period to seek their engagement.	
Output 2. Training in Mammal field research techniques, resulting in increased human capacity in Malaysia for mammal field studies.	• Minimum of 60 Malaysian students & scientists, including 2 trainers, successfully trained during field course. 1 individual to receive 3 years on the job training and 2 month WildCRU scholarship.	• The first 2 training courses were successfully held during June 2007 when 33 Malaysian scientists received training. Daniel Pamin's on-the-job training is going exceedingly well and he is an ideal candidate to further the study of Borneo's wild cats beyond the capacity of the Darwin project. This indicator is still considered to be appropriate	
Activity 2.1 Field courses in mammal field research techniques.		• The first 2 training courses were run in close collaboration with ITBC in June 2007. ITBC deemed the courses a great success and have agreed to adopt the course as part of their BSc in Conservation Biology. Next	

		period will include 2 more training courses during which Daniel Pamin will take a more active, leading role.
Output 3. Wild cat specific education programme, aimed at schools, communities & tourists, for use in DVFC environmental education centre, & 2 major tourist facilities in the region: Borneo Rainforest Lodge & Tabin Wildlife Resort.	• Bornean wild cat education materials produced using clouded leopard as a flagship species & displayed at target institutions, & utilised in environmental education programmes.	• Bilingual posters have been produced using the more superior images from the camera trapping programme. These are now displayed at Danum Valley Field Centre and Borneo Rainforest Lodge and will shortly be displayed at Tabin Wildlife Reserve. Posters may also be displayed at Lok Kawi Wildlife Park and ITBC. A guide to mammal footprints has been produced and used to great success on the training courses. The indicator is still viewed as appropriate.
Activity 3.1 Development / production of wild cat education materials & implementation of environmental education programme.		• Improved education boards have been designed and locations for display of additional posters are being identified (e.g. Lok Kawi Wildlife Park and ITBC). Photographs have been made available for general mammal information posters at Danum Valley Environmental Education Centre. Next period will include the production of extra print guides to enable a good number to be donated to both ITBC and Danum Valley Field Centre at the end of the project. As additional ecological data is collected on the cats, species specific posters may be produced. The GCP has previously worked with Cartoonists to develop education boards for UK canopy activity sites (Go Ape) – see Appendix 3F for an example. We are looking at raising additional funds to develop similar boards highlighting issues regarding the Bornean Wild Cats.
Output 4. Report on the threats from hunting & trade on wild cat populations in & surrounding Tabin Wildlife Reserve	• Number of participants in communities surrounding Tabin Wildlife Reserve successfully interviewed.	• Questionnaire survey at Tabin has been postponed due to the sensitive nature of this issue with the Wildlife Department. Should it be deemed politically sensible to not carry out the survey, a report based solely on the hunting level in different habitats from photographic evidence will be produced. We continue to collect data on the level of hunting in the Ulu Segama-Malua Forest Reserve from photographic evidence from the camera traps. Indicator is still appropriate at present.
Activity 4.1 Hunting survey in communities surrounding the Tabin Wildlife Reserve.		• The questionnaire survey has been postponed due to sensitivities arising from this line of research. We are currently investigating the possibility of a student from ITBC carrying out the surveys for a BSc or MSc project; this may be more agreeable to the Wildlife Department.

Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal: **To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve** • **the conservation of biological diversity,** • **the sustainable use of its components, and** • **the fair and equitable sharing of benefits arising out of the utilisation of genetic resources**			
Purpose			
• Threatened Bornean wild cat species better protected through an increased knowledge base, greater awareness, & through enhanced capacity for field research in Sabah.	• New, constructive data regarding Bornean wild cat ecology (including greater knowledge of habitat requirements and range), response to habitat alteration, & threats from hunting in Sabah. Data regarding the presence of rare species in the Conservation Area will help to maintain its protected status and thereby the continued protection of many species • ITBC students trained in mammal field techniques – the next generation of decision makers and the people most likely to take roles in the SWD. • Feedback from training course regarding changed perceptions and attitudes • Bornean wild cat education materials produced & utilised in environmental education programmes.	• Partner institution reports. Final & annual project reports and feedback from dissemination workshop.	• Sufficient numbers of wild cats can be filmed/ photographed, trapped, collared & successfully tracked • Recommendations read by relevant stakeholders & changes implemented where necessary. Evidence is being collated of hunting pressures.

	Greater awareness of the threats		
Outputs			
• A report providing recommendations for a Bornean Wild cat Action Plan for Sabah and a project dissemination workshop	• Report peer reviewed & publication date established. Report distributed to target institutions/bodies within 6 months of project completion.	• Reviews & feedback on recommendation report from peers and from workshop attendees. Min. 2 peer reviewed papers published in scientific journals within 1 year of project end.	• Research project is completed and data analysed. • Stakeholders attend project dissemination workshop.
• Training in mammal field research techniques, resulting in increased human capacity in Malaysia for mammal field studies.	• Minimum of 60 Malaysian students & scientists, including 2 trainers, successfully trained during field course. 1 individual to receive 3 years on the job training and 2 month WildCRU scholarship.	• Field course manual, participants attendance records & feedback assessment	• Sufficient numbers of students show an interest in attending the course, & continue in the field of ecology
• Wild cat specific education programme, aimed at schools, communities & tourists, for use in DVFC environmental education centre, & 2 major tourist facilities in the region: Borneo Rainforest Lodge & Tabin Wildlife Resort.	• Bornean wild cat education materials produced using clouded leopard as a flagship species & displayed at target institutions, & utilised in environmental education programmes.	• Posters, handouts, guides, & new wild cat photos & video. Partner institution reports.	• School groups continue to visit DVFC & utilise the educational materials. Tourists continue to visit Borneo Rainforest Lodge & Tabin Wildlife Resort.
• Report on the threats from hunting & trade on wild cat populations in & surrounding Tabin Wildlife Reserve.	• Number of participants in communities surrounding Tabin Wildlife Reserve successfully interviewed.	• Hunting reports produced at end of year 1 & 2.	• Communities co-operate with us & our local collaborators during the questionnaire survey.
Activities	**Activity milestones (summary of project implementation timetable)**		**Assumptions**
• Field research Programme	• Yr 1: camera survey of DV & TWR, phase 1 of live-trapping programme at DV, first cats collared. Yr 2. Continuation of camera survey and		• Sufficient numbers of wild cats can be filmed/ photographed,

	trapping & tracking programme. Yr 3. Continuation of camera survey & trapping & tracking programme. Long-term mammal monitoring programme established.	trapped, collared & successfully tracked.
• Wild cat Action Plan recommendation report	• Collation of information from field programme; report produced and presented at workshop in May 2009, final amended report produced by June '09; submission of >2 papers to peer reviewed journals by Mar '10.	• N/A
• Project dissemination workshop	• Relevant stakeholders and project partners invited to attend workshop in Kota Kinabalu, Sabah during May 2009	• Key stakeholders attend workshop.
• Field courses in mammal field research techniques.	• Two 5 day field courses to be held each year during 2006/07/08, each involving a minimum of 10 Malaysian students per year, at least 1 Malaysian ecologist & 2 UK ecologists.	• Sufficient numbers of students/scientists attend the course.
• Development / production of wild cat education materials & implementation of environmental education programme.	• Initial ID/information posters, handouts & guides produced & displayed/presented by Yr 1. Additional environmental education materials produced in Yrs 2 & 3 as further wild cat data & photos are obtained.	• Sufficient data & wild cat photos are obtained for incorporation in environmental education materials
• Hunting survey in communities surrounding the TWR.	• Yr 1: 4 week survey completed, & data analysed. Yr 2: Follow-up survey completed, data analysed & final report produced and distributed.	• Communities co-operate with us & our local collaborators.