



# Darwin Initiative Annual Report



DARWIN200

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 2009

## 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
Host country Partner Institution(s)	Institute for Tropical Biology and Conservation, Universiti Malaysia, Sabah
Other Partner Institution(s)	Wildlife Conservation Research Unit, University of Oxford. Royal Society South East Asian Rainforest Research Project
Darwin Grant Value	£ 229,744
Start/End dates of Project	1 <sup>st</sup> June 2006 - 1 <sup>st</sup> October 2009
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1 <sup>st</sup> April 2008 to 31 <sup>st</sup> March 2009. Annual report number 3
Project Leader Name	Katherine Secoy
Project website	<i>Dedicated pages on GCP website:</i> <a href="http://www.globalcanopy.org/main.php?m=116&amp;sm=141&amp;t=1">www.globalcanopy.org/main.php?m=116&amp;sm=141&amp;t=1</a> Project blog: <a href="http://borneanwildcat.blogspot.com">http://borneanwildcat.blogspot.com</a>
Author(s) and main contributors, date	Joanna Ross, Andrew Hearn, Katherine Secoy and Henry Bernard. April 2009

## 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 9,730 km<sup>2</sup> 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 forest 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.

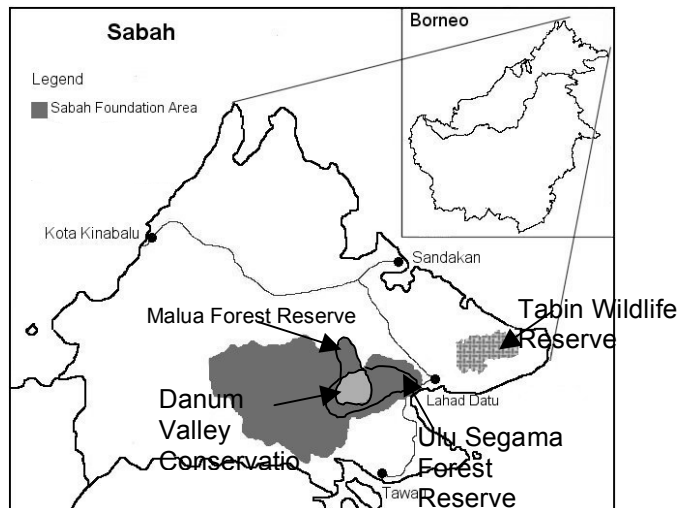


Fig. 1. Map of Sabah, Malaysia, highlighting the study areas.

## 2. Project Partnerships

The partnership between the Global Canopy Programme (GCP) and the Institute for **Tropical Biology and Conservation (ITBC)** has remained consistently strong throughout the first two years of the project and will likely remain so during the last crucial year. Professor Abdul Hamid has now succeeded Professor Maryati Mohamed as director of the ITBC. As a mammal specialist, Professor Hamid has shown strong support for the project and the ITBC continues to have an important role in implementing the training course. During the last year of the project three students from ITBC will undertake their BSc research projects under the Bornean Wild Cat and Clouded Leopard Project.

The partnership with **Sabah Wildlife Department (SWD)** remains strong with firm support from the senior veterinarian, Dr. Senthival Nathan. The SWD has provided in-kind funding in the form of further donated equipment and specialist veterinary advice to facilitate the live-trapping programme. We are also currently working alongside the SWD in the production of further wild cat education boards that the SWD will fund for distribution within their existing education programme.

The partnerships with **Yayasan Sabah** and the Royal Society's **South East Asian Rainforest Research Project (SEARRP)** also remain strong, with both providing excellent logistical support, especially with regard to the training courses and advice. SEARRP have also provided considerable financial support to our field activities, funding the accommodation and subsistence costs of our volunteer veterinarians. Professor David Macdonald at the **Wildlife and Conservation Research Unit**, Oxford University continues to provide sound scientific advice, and both principle researchers are now working with Professor Macdonald to pursue the possibility of continuing the conservation programme and ecological research and undertaking DPhils.

A formal partnership with **HUTAN**, a Sabah based NGO is yet to come to fruition, however we have maintained contact with HUTAN staff over the last year and hope to form a more constructive relationship this coming year.

We are developing a good partnership with the **Clouded Leopard Project (CLP)**, based at the Point Defiance Zoo. In addition to providing us with funds to pay for replacement camera traps the CLP are keen to work with us to develop wild cat specific education materials.

Following the recent Clouded Leopard and Small Felid Conservation Summit in Thailand we have formed a Bornean Felid working group. This group is composed of individuals currently working on, or planning to work on, the conservation of wild cats in Borneo and it is envisaged that the working group will provide a mechanism for members to identify key issues relating to research, trade, and community education, and create strategies for future collaborative efforts to benefit felid conservation in Borneo. Information arising from this group will be fed into the project's Recommendations report.

### **3. Project Progress**

#### **3.1 Progress in carrying out project activities**

**Output 1. Recommendation Report:** The Recommendation Report will be based largely on the outcomes of the research aspects of the project and the awareness survey. Data collection for this report is proceeding well and as planned, although the awareness survey has been postponed, as detailed in the last annual report. Photo-capture probability for clouded leopards proved to be too low in the Danum Valley Conservation Area (primary forest) to allow a capture-mark-recapture based density estimate to be generated, however relative felid densities and those of other species have been obtained over the past 2.5 years.

In October 2008, the cameras were moved to recently logged forest in the Malua Forest Reserve. The cameras revealed a higher level of hunting in this area than in the first logged area surveyed and also a lower clouded leopard density. This is the first tentative evidence that logging activity and/or increased hunting activity, has resulted in lowered clouded leopard density. In addition to clouded leopards, marbled cats, bay cats and a significant number of leopard cats have been recorded; flat-headed cats were not recorded in Malua. Over 10,000 photographs of wildlife were taken in Malua Forest Reserve and included some very rare species such as otter civets, banteng (wild cattle) and Storm's stork. Of notable importance is the second ever photograph of a wild Malay weasel. Preliminary reports of our findings have been submitted to the relevant authorities, including the Malua Biobank advisory committee (Supplementary materials 1). The cameras were moved in March 2009 to an adjacent oil palm plantation where the survey will be conducted for the next two months. This will be followed by a camera survey of the Tabin Wildlife Reserve which will commence in July. Although the habitat types represented at Tabin have been surveyed in Malua and the adjacent oil palm, Tabin represents a large and extremely important area for wildlife and a survey there is of high conservation importance. A successful survey in Tabin will help give a clearer overall picture of clouded leopard numbers across Sabah. Examples of recent camera trap photos are shown in supplementary materials 2.

Two main sessions of live-trapping have now taken place, covering a total of 5.5 months. Following the notable collaring of the clouded leopard in January 2008, six leopard cats were also successfully trapped and collared in May and June 2008. The second session of live-trapping saw the trapping and collaring of a further three leopard cats, including the first ever leopard cat to be collared with a GPS collar. The data from these cats is providing baseline information on home range size and habitat use. Photographs depicting some of the recent live-trapping are in supplementary materials 3.

To date, initial findings have revealed leopard cat home ranges to be around 3 km<sup>2</sup> with old logging roads being an important habitat feature, although forest some distance from the roads is also frequently used. There also appears to be some discrepancies between male and female habitat use in that males are more likely to use the roads than females. Three of the collared leopard cats have unfortunately died; one was hit and killed by a car on the main logging road and two have been killed and eaten by pythons with their remains and still-functioning collars being regurgitated, so enabling us to find them. The data from the collared clouded leopard has shown her to have a home range of at least 28 km<sup>2</sup>. Like the leopard cats, she uses old logging roads, but also regularly uses forest away from the roads. The camera trapping data, in addition to providing excellent density estimates, are also producing basic

spatial information regarding these cats and these data also suggest that the roads may be dominated by male rather than female clouded leopards.

**Output 2. Mammal field course:** The third mammal field research techniques training course was held in November 2008 after having been postponed twice, as detailed in the half year report 2008. Fifteen undergraduate students were trained on this course and one of the attendees of the previous course returned to assist, bringing the total number of trained students to 48. Daniel Pamin (the project trainee counterpart from ITBC) performed an active teaching role during this course, teaching the camera trapping module and also giving a lecture on conservation genetics, which is the main theme of his PhD. The next course is scheduled to run 11<sup>th</sup> - 17<sup>th</sup> May when a further 15 students will be trained, along with five members of teaching staff from ITBC. The incorporation of extra teaching staff onto this course is to ensure a smooth hand-over and amalgamation with ITBC's existing field course module. Photos from this course are in supplementary materials 4.

**Output 3. Development and production of wild cat education materials:** Education boards depicting the five species of felid found on Borneo, with basic information in both English and Bahasa Melayu are on display at Danum Valley Field Centre, Borneo Rainforest Lodge, Lok Kawi Wildlife Park and ITBC. In addition, a board has recently been donated to Danum Palm School in the oil palm plantation where the camera survey is currently underway. As detailed in the half year report 2008, Karen Povey from the Clouded Leopard Project at Point Defiance Zoo and Aquarium, Tacoma, USA visited the project in late August 2008 to discuss expanding the education programme with the production of a clouded leopard story book as a priority. This book has now been translated into Malay by Dr Henry Bernard of the ITBC and the publication awaits the adjustment of some artwork to make the book more appropriate for a Malaysian audience and the securing of funding to cover printing and distribution costs. The book will be printed and distributed before the end of the current project; target audiences will include schools throughout Sabah with a priority being the schools in the villages where the environmental awareness survey is conducted. We continue to work closely with the Wildlife Department to produce additional posters that the Wildlife Department will fund for distribution to schools across Sabah as part of their existing education programme.

**Output 4. Hunting/environmental awareness survey:** Having taken into account the comments and concerns arising from the review of the annual report 2008 we have re-evaluated the approach for this questionnaire survey. However, discussions with ITBC and Sabah Wildlife Department regarding this have concluded that a local person conducting the survey would be better received by the villagers than a foreigner would be. ITBC are keen that this survey is undertaken by a student and although we understand the concerns regarding the level of sensitivity that a student may be able to display we feel that with guidance from ITBC this will not be an issue. Students from ITBC have previously undertaken similar, successful, projects in the villages around Tabin and so ITBC staff members are aware of these sensitivities and will be sure to brief the student accordingly. In addition, we have sought advice from social scientist Dr. Maggie Redshaw at Oxford University and Miss Kertijah Abdul Kadir who has conducted a previous survey in this area and now works for WWF Malaysia. We believe that with their input and guidance, questions will be phrased in the most appropriate manner. These villages will also be the priority target audience for the distribution of the storybooks and education boards. In addition we continue to gather evidence regarding hunting in different areas from the camera trap data.

### **3.2 Progress towards Project Outputs**

By project closure we feel confident that the stated goals will have been met and we continue to make steady progress towards these. The data gathered to date represents the first robust data for the Bornean felid guild and this knowledge will be amplified during the remaining six months of the project. These novel data, including density estimates for the Sunda clouded leopard from at least 2 different forest reserves, will be used to appropriately advise land managers through the Recommendations Report upon project closure. Although the environmental awareness questionnaire survey has been delayed, useful data will nonetheless be obtained from the survey due to take place in May. The cat specific education boards will

be updated and distributed in collaboration with the Sabah Wildlife Department during the next few months and we hope to finalise the storybook and have this distributed before project closure, in collaboration with The Clouded Leopard Project. We are on target to meet and, indeed exceed (by at least four students) the output of 60 trained students by the end of the project through both the training course and on-the-job training.

### 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	Number planned for this reporting period	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.	0.5	1	1		1 x 2.5 years	1 x 1 year	1 x 3 years
6A	WildCRU, University of Oxford, training scholarship for one ITBC graduate counterpart.	0	0	0		0	0	1 month
4A/4C	60 students trained in mammal field research techniques	0	33	15		48	15	60
7	Educational leaflets & posters describing Bornean wild cats	4	-	4		8	-	4
7	Field Course manual produced in English	1	0	0				1
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	48 weeks		126 weeks	48 weeks	143 Weeks
8	Project manager: 1 week 06/07 and 09/10.	1 week	0	0			0	2 weeks
8	Scientific advisor: 1 week in 06/07 and 09/10	1 week	0	0			0	2 weeks
9	Final recommendation report	0	0	0				1
10	Field guide to Bornean carnivores and their field signs	0	20 copies	0		20 copies		Not specified
14a	Minimum of three seminars at Danum presenting project findings.	2	2	2		6	-	3
14b	Presenting findings at	2	2	2		6		2

	relevant conferences							
11B	Minimum of 2 papers submitted to peer review journals	0	0	0		0	0	2
16a	Annual "Canopy Fellows Newsletter" and bulletins on GCP website.	5	4	4		9		6
16c	GCP Annual Report	1	1	1			1	3
20	Value of equipment left in Malaysia	0	0	0		0	0	£29,328.50
23	Financial outputs	£2,500	£12,400	£6,903			£21,803	£4,421
New - Project specific measures	Educational story book printed and distributed	0	0	0		0	2,000	2,000

**Table 2 Publications**

Type (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Newspaper article and on-line article	Image of another rhino captured. WWF. September 2008	Daily express	<a href="http://www.dailyexpress.com.my/news.cfm?NewsID=59862">http://www.dailyexpress.com.my/news.cfm?NewsID=59862</a>	£0
On-line article	Saving the world's most recently discovered cat species. Rhett Butler. April 2008.	Mongabay.com	<a href="http://news.mongabay.com/2008/0410-interview_hearn_ross.html">http://news.mongabay.com/2008/0410-interview_hearn_ross.html</a>	£0
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	£60
GCP Website	Canopy Cats	Global Canopy Programme	<a href="http://www.globalcanopy.org">www.globalcanopy.org</a>	In kind
Darwin Initiative Eleventh Annual Report	Bornean Wild Cat and Clouded Leopard Project	Darwin Initiative	Darwin Initiative, DEFRA	In Kind
GCP Updates	Updates from the Field	Global Canopy Programme	John Krebs Field Station, Wytham, Oxford, OX2 8QJ	In kind
GCP Annual Report	Katherine Secoy	Global Canopy Programme	John Krebs Field Station, Wytham, Oxford, OX2 8QJ	In kind

### 3.4 Progress towards the project purpose and outcomes

The original purpose of the project has been re-phrased and now states "To attain greater knowledge of the ecology of the Bornean wild cat species, to increase awareness of these felids and to enhance capacity for future research, so increasing the potential for the improved protection of Borneo's wild cats". This change was detailed in the half-year report 2008. The progress towards this purpose is advancing as planned. The knowledge of the Bornean felid ecology has been enhanced by the camera surveys in differing habitats; we have been successful in acquiring novel data in forest areas subjected to different forest management regimes and now have the first insight into how these management practices are impacting populations of clouded leopards and other wild cat species. Awareness of the cats has been increased at a local and international level through the posters and presentations at various

events and this will be increased in the coming months through the collaboration with the Wildlife Department and also the Clouded Leopard Project. Research capacity has been increased through the training courses and 43 students to date have already successfully completed the training course. In addition, Daniel Pamin's on-the-job training has resulted in an individual proficient in camera trapping and radio tracking who is now able to employ these techniques in his own research projects in the future. Our host-country counterpart Dr. Henry Bernard is also working with Daniel Pamin to apply his acquired camera trap techniques in forest fragments to survey for cats and other wildlife and so form the basis for a long-term mammal monitoring programme in the region. If the recommendations arising from the research are taken onboard by local decision makers and felid research is continued beyond the scope of the current project the Bornean felids will be better protected.

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

Under the Convention on Biological Diversity Malaysia has stated objectives 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.

The status and conservation needs of the Bornean clouded leopard and the other four wild cats on Borneo are becoming clearer; the surveys in forests under different forest management regimes, or different stages of recovery following logging are helping us to understand the effects of these practises on these species. These novel data and those gathered in the remaining months of the project can now be used to construct effective strategies to aid the conservation of these cats. Furthermore, the data from the camera traps have provided information concerning all wildlife and conclusions can now be drawn regarding the impact of forest management on many different species. In addition, any strategies implemented to conserve and protect the clouded leopard will benefit many species as the clouded leopard is an umbrella species, requiring significant areas of forest for survival.

## **4. Monitoring, evaluation and lessons**

**Project monitoring and evaluation:** The Global Canopy Programme and ITBC are updated with the project progress through monthly reports, regular meetings and frequent email contact. These ensure that progress moves forward in agreement with the established timeline and problems are eliminated quickly and efficiently. Project expenditures are still submitted to the GCP each month and feedback regarding this ensures the project budget is adhered to.

**Indicators of achievement:** Following on from last year, photographic data are continually kept up to date, logged and analysed. Daily locations of the radio-collared animals are entered into a spreadsheet and displayed on a map along with locations of individual cats recorded from the camera traps. These data are giving us a clearer understanding of the ranges of these animals, the degree of range overlap and the types of habitat that they use, all of which is relevant information for the recommendation report.

Feedback from course participants and ITBC was used to judge the success of the training course and to make minor modifications where appropriate. In this way achievements can be easily verified.

**Lessons:** The camera-trap survey in the Conservation Area was not successful due to the difficulty of predicting clouded leopard travel routes because of the open nature of the forest and so locating cameras in optimum areas to obtain photo-captures was often not possible. We hope that an intense survey of this area will form part of a future project and the lessons learned from the first surveys of this area will be invaluable during this future phase. During the

survey of Malua Forest Reserve some cameras were lost to poachers and others damaged by elephants despite the reinforced protective cases that were designed and used to great success in the Ulu Segama Forest Reserve. Despite this, usable data were nonetheless acquired and these losses have not impacted greatly on the research. However future or repeat surveys in this area may need a slightly different approach.

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

All responses to the previous annual report were submitted, as requested, with the half year report 3.

## **6. Other comments on progress not covered elsewhere**

### **Clouded Leopard and Small Felid Conservation Summit:**

During January 2009 both principle researchers attended the Clouded Leopard and Small Felid Conservation Summit organised by the Clouded Leopard Project and Kasetsart University and held in Bangkok. During this summit our project findings were used to assess the threats, status and conservation needs of the cats in Sabah and across Borneo. A Borneo Felid working group was formed to enable a mechanism for future collaborative work and to identify priority areas for research.

### **Additional Camera Traps and Collars Funded**

Additional funding has also been secured for more camera traps from the Clouded Leopard Project and also from WildCRU. In addition, two GPS collars were donated to the project by the Felidae Conservation Fund.

### **Aerial Helicopter Survey**

On 7<sup>th</sup> October 2008, through funding provided largely by WildCRU, both principle investigators and Daniel Pamin undertook an aerial survey using a helicopter to attempt to locate the collared clouded leopard that we had not managed to pick up a signal from for the previous five months. The survey was a success in that the signal was found in an area of forest a few kilometres further north of this cat's known range, but the signal was very weak and distorted and it would appear that the collar has been damaged. The signal did however appear to be active, implying that no harm had come to the animal. Further searches on foot and from the vehicle have failed to pick up the signal again, confirming that the collar has been damaged in such a way that it is now emitting a signal too weak to be picked up from ground level and it is therefore unlikely that we will be able to track the clouded leopard further. We also used this opportunity to search for one of the collared leopard cats that we'd not been able to track for several weeks. Having pinpointed its collars signal from the air, a search on foot discovered that this cat had been killed and eaten by a python, leaving the collar intact and still functioning, but in an area of forest where we had previously not found this individual.

### **Daniel Pamin's Academic Fellowship to WildCRU, Oxford University**

The dates for Daniel Pamin's academic visit to WildCRU, Oxford University have been set for July-August 2009. This will also allow him to attend relevant parts of the new post-graduate diploma course in International Wildlife Conservation Practice, at no extra cost, which has been agreed by course organisers. During this period Daniel will also aim to write to chapters of his PhD thesis, whilst benefiting from the experience, support and scientific advice from members of the WildCRU.

## **7. Sustainability**

Once the current Darwin project is concluded the ITBC will have the technical knowledge to sustain ongoing work and the donation of cameras and radio tracking equipment will help to facilitate this. Subject to funding and the continued support of the ITBC, it is likely that the principle investigators will continue to work in Sabah alongside ITBC, on complimentary



projects, and so will be able to provide advice and support where appropriate. The training courses will be incorporated into the ITBC syllabus and so the training of future students will be maintained. With Daniel Pamin undertaking his PhD at ITBC he will be able to maintain an input in a teaching capacity in the training courses.

The project has been promoted locally through the display of the education boards at Danum Valley Field Centre, Borneo Rainforest Lodge, Lok Kawi Wildlife Park and the school located within the Danum Palm oil palm plantation.

Project findings have been discussed during regular seminars at Danum Valley Field Centre and also at a Wild Cat Workshop in Thailand, where project findings were used to assess the threats, status and conservation needs of the cats in Sabah.

The continuation of activities beyond the current Darwin project is still dependent on future funding, however it is likely that some form of collaboration will be maintained should this be considered appropriate to ITBC.

## **8. Dissemination**

This year, the project findings have been presented to visiting academics during seminars held at the Danum Valley Field Centre and to local and international researchers and organisations at the Clouded Leopard and Small Felid Conservation Summit in Thailand. Further presentations are planned for May and June to report the findings to the Sabah Forestry Department and Sabah Wildlife Department.

Project progress is regularly reported to the Global Canopy Programme alliance and members database and included in the GCP's annual reports and website.

Wild cat education boards are now displayed at Danum Valley Field Centre, Borneo Rainforest Lodge, Lok Kawi Wildlife Park and the school located within the Danum Palm oil palm plantation.

The target audience for the recommendations workshop has been identified, initial invites have been sent and the workshop agenda is currently being drawn up. The workshop will be held in October rather than September, as previously planned, to avoid a clash with the religious celebrations of Ramadan and Hari Raya. Consequently we plan to request a delay to the end date of this project by a month, which will be done separately to this report.

## 9. Project Expenditure

**Table 3 Project expenditure during the reporting period (Defra Financial Year 1 April 2008 to 31 March 2009)**

Item	Budget (please indicate which document you refer to if other than your project application or annual grant offer letter)**	Expenditure	Variance
Rent, rates, heating, overheads etc			
Office costs (eg postage, telephone, stationery)			
Travel and subsistence			
Printing			
Conferences, seminars, etc			
Capital items/equipment (specify)			
Others (specify)			
Vet Training Course			
Travel Insurance			
Excess Baggage			
Audit			
WidCru Desk fees For Research Associates			
WildCru Research Fellowship			
Salaries (specify by individual)			
Andrew Mitchell			
Katherine Secoy			
Andrew Hearn			
Joanna Ross			
GCP Admin Support			
Prof Abdul Hamid			
Dr Henry Bernard			
Daniel Pamin			
Malaysian Research Assitants			
ITBC Book Keeper			
TOTAL			

\*\* It has been previously agreed with the Darwin Secretariat to transfer £9,532 to the next financial year (FY 09/10)

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

### **Second ever photo of the Sumatran Rhino**

During a clouded leopard camera-trap survey of the Danum Valley Conservation Area members of the Darwin Initiative funded "Bornean Wild Cats & Clouded Project" were fortunate to capture two images of the extremely rare Sumatran Rhinoceros *Dicerorhinus sumatrensis* on their camera traps. These two images of a young female rhino, taken during the day on the 18<sup>th</sup> July, 2008, are noteworthy as they are thought to be only the second time this species has been photographed in the wild. The Sumatran rhinoceros is now classified as *critically endangered* by the IUCN, with no sub-population larger than 50 individuals. The photos do, however, provide evidence for the continued presence of this species within Sabah.

### **First small cat to be tracked with a GPS collar**

In January 2009 the first ever leopard cat was collared with a GPS collar. It is only very recently that the technology has advanced far enough to allow GPS collars to become small enough

and light enough (weighing 63 grams) to be worn by a small cat and to still be less than 3% of the cat's body weight. The cat collared was a healthy adult male weighing 2.4 kg. These collars use a store-on-board method to save the GPS data but also have a VHF transmitter so allowing usual radio tracking of the collared animal. A break-away weak spot sewn into the collar allows it to drop off the cat, then it is necessary to find the collar and download the GPS data as a wireless data upload was not available when the collar was purchased. These data, once retrieved from the collar, will give us valuable information regarding the spatial movements of this cat that would not have been obtained otherwise.

[I agree for LTS and the Darwin Secretariat to publish the content of this section](#)

## Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2008/09

Project summary	Measurable Indicators	Progress and Achievements April 2008 - March 2009	Actions required/planned for next period
<p><b>Goal:</b> <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>To date over 25,000 photographs of wild cats and other seldom seen species have been obtained from palm plantations and forests under a range of different forest management regimes. These data are enabling us to draw tentative conclusions regarding the effects of different forest management techniques on the felid and mammalian fauna of Bornean forests. The radio tracking data is providing novel data regarding felid home range size and habitat use. Together, these data will feed directly into a report providing recommendations for a Bornean Wild cat Action Plan for Sabah and a project dissemination workshop, so aiding the Sabah Wildlife Department in their conservation efforts.</p>	<p><i>(do not fill not applicable)</i></p>
<p>Purpose To attain greater knowledge of the ecology of the Bornean wild cat species, to inform the establishment of effective conservation strategies, to increase awareness of these felids and to enhance capacity for future research so increasing the potential for the improved protection of Borneo's wild cats.</p>	<ul style="list-style-type: none"> <li>• New informative data regarding Bornean wild cat ecology, response to habitat alteration &amp; threats from hunting in Sabah.</li> <li>• Students trained in mammal field techniques</li> <li>• Bornean wild cat education materials produced &amp; utilised in environmental education programmes.</li> </ul>	<ul style="list-style-type: none"> <li>• Data is being accrued at a satisfactory rate and as planned. A second mark-recapture study was completed during October to December 2008 in different habitat to the first survey so enabling some conclusions regarding forest management practises to be drawn. Data from radio tracking continues to provide a valuable insight into habitat requirements of the cats.</li> <li>• 15 students were trained, bringing the total trainees to 48</li> <li>• Additional bilingual posters are now displayed at Lok Kawi Wildlife Park and a local school. The mammal print guides continue to be used on the training courses</li> </ul>	<ul style="list-style-type: none"> <li>• Additional camera surveys will be conducted in a local oil palm plantation (now underway) and the Tabin Wildlife Reserve. Continuation of live-trapping and radio tracking programme</li> <li>• The next training course will run May 11<sup>th</sup> - 17<sup>th</sup>. 15 students are currently signed up to participate along with 5 members of ITBC staff</li> <li>• Additional posters to be printed and distributed in collaboration with SWD. Malaysian version of the clouded leopard storybook to be finalised, printed and distributed</li> </ul>

<p>Output 1. A report providing recommendations for a Bornean Wild cat Action Plan for Sabah and a project dissemination workshop</p>	<ul style="list-style-type: none"> <li>• Report peer reviewed &amp; publication date established. Report distributed to target institutions/bodies within 6 months of project completion.</li> </ul>	<ul style="list-style-type: none"> <li>• The report will be based largely on the data collected through the camera trapping and radio tracking; this data continues to accumulate satisfactorily. The first density estimate for clouded leopards has been complemented by a second study in very recently logged forest and the felid assemblages of primary and logged forest can now be compared for the first time. This indicator is still appropriate.</li> </ul>
<p><b>Activity 1.1</b> Field research programme</p>		<ul style="list-style-type: none"> <li>• To date 30 months of camera trapping have been completed in 3 different habitat types: primary, old-logged and newly-logged forests. The camera trapping has resulted in a second density estimate for clouded leopards and good data regarding relative abundances of the other cat species that can be related to different forest management practices. Next period will conclude the current camera trapping in oil palm and a new clouded leopard mark-recapture survey in the Tabin Wildlife Reserve. 5.5 months of live-trapping have been completed and have resulted in the capture of 1 female clouded leopard and 9 leopard cats. As some time was lost previously for the live-trapping programme this will be continued well into the next period. All of these efforts are providing important data relevant to the recommendation report have been obtained. Additional funding is being sought to enable the continuation of the project beyond the scope of the current Darwin-funded programme in order to further and refine the knowledge garnered to date.</li> </ul>
<p><b>Activity 1.2</b> Wild cat Action Plan recommendation report</p>		<ul style="list-style-type: none"> <li>• 2 papers based on our camera trapping results are currently being drafted, the findings of which will be incorporated into the final Recommendation report. A draft structure for the Recommendation report is also currently underway.</li> </ul>
<p><b>Activity 1.3</b> Project dissemination workshop</p>		<ul style="list-style-type: none"> <li>• The date for the workshop has been moved to October to avoid religious holidays and previous engagements of our collaborators. Relevant and interested parties have been contacted to seek their commitment.</li> </ul>
<p>Output 2. Training in Mammal field research techniques, resulting in increased human capacity in Malaysia for mammal field studies.</p>	<ul style="list-style-type: none"> <li>• Minimum of 60 Malaysian students &amp; scientists, including 2 trainers, successfully trained during field course. 1 individual to receive 3 years on the job training</li> </ul>	<ul style="list-style-type: none"> <li>• A further 15 Malaysian students were trained during the reporting period, with Daniel Pamin teaching part of the course. Daniel's on-the-job training continues to progress well he has completed 2.5 years of training and registered for a PhD in March 2008,</li> </ul>
<p><b>Activity 2.1</b> Field courses in mammal field research techniques.</p>		<ul style="list-style-type: none"> <li>• In collaboration with ITBC the 3<sup>rd</sup> training course was held in November 2008 when a further 15 students were trained. Work is progressing to enable the course to become amalgamated with ITBC's existing field work module and during May 2009 we will hold the next course with additional members of ITBC staff attending to ensure a smooth hand-over.</li> </ul>
<p><b>Activity 2.2</b> WildCRU scholarship</p>		<ul style="list-style-type: none"> <li>• The dates for Daniel Pamin's academic visit to WildCRU have been set for July-August 2009. This will also allow him to attend relevant parts of the new post-graduate diploma course in International Wildlife Conservation Practice, at no extra cost, which has been agreed by course organisers. During this period Daniel will also aim to write to chapters of his PhD thesis, whilst benefiting from the experience, support and scientific advice from members of the WildCRU.</li> </ul>
<p><b>Output 3.</b> Wild cat specific education programme, aimed at schools, communities &amp;</p>	<ul style="list-style-type: none"> <li>• Bornean wild cat education materials produced using clouded leopard as a flagship species &amp;</li> </ul>	<ul style="list-style-type: none"> <li>• Additional education boards have been displayed at Lok Kawi Wildlife Park, ITBC and a local school in an oil palm plantation. Through collaboration with the Clouded Leopard Project an educational storybook will be produced and distributed to</li> </ul>

tourists, for use in DVFC environmental education centre, & 2 major tourist facilities in the region: Borneo Rainforest Lodge & Tabin Wildlife Resort.	displayed at target institutions, & utilised in environmental education programmes.	schools throughout Sabah, we continue to seek additional funding for this. This indicator is still viewed as appropriate.
<b>Activity 3.1</b> Development / production of wild cat education materials & implementation of environmental education programme.		<ul style="list-style-type: none"> <li>• Additional education boards have been produced, framed and donated for display at Lok Kawi Wildlife Park, ITBC, Tabin Wildlife Reserve and a local school located within the Danum Palm oil palm plantation, raising the total number of boards on display to 7. We continue to work with the SWD who have tentatively agreed to provide funding for the production of several hundred of our wild cat education boards for incorporation into their ongoing environmental education programme. An educational clouded leopard based storybook is planned in collaboration with The Clouded Leopard Project and, subject to funding, the next period will see the production and distribution of 5000 copies of this publication.</li> </ul>
<b>Output 4.</b> Report on the threats from hunting & trade on wild cat populations in & surrounding Tabin Wildlife Reserve	<ul style="list-style-type: none"> <li>• Number of participants in communities surrounding Tabin Wildlife Reserve successfully interviewed.</li> </ul>	<ul style="list-style-type: none"> <li>• Although this survey has been postponed it is now planned for May 2009. Data continues to accrue from camera trap data regarding hunting activities in different habitats. The report will be constructed from both the questionnaire data and the data from the camera traps</li> </ul>
<b>Activity 4.1</b> Hunting survey in communities surrounding the Tabin Wildlife Reserve.		<ul style="list-style-type: none"> <li>• This survey is now planned for May 2009 and to be undertaken by a student from ITBC, with support from the projects PIs, as this was deemed most appropriate by all parties involved. The questionnaire is currently being finalised in collaboration with ITBC. In addition, during the next period and in collaboration with other researchers based on Borneo, we plan to produce a standardised questionnaire survey to be used throughout Borneo by all researchers and NGOs studying cats to give an overall picture of hunting based threats.</li> </ul>

## Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<b>Goal:</b> 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 <ul style="list-style-type: none"> <li>• the conservation of biological diversity,</li> <li>• the sustainable use of its components, and</li> <li>• the fair and equitable sharing of benefits arising out of the utilisation of genetic resources</li> </ul>			
<b>Purpose</b>			
<ul style="list-style-type: none"> <li>• To attain greater knowledge of the ecology of the Bornean wild cat species, to inform the establishment of effective conservation strategies, to increase awareness of these felids and to enhance capacity for future research so increasing the potential for the improved protection of Borneo's wild cats.</li> </ul>	<ul style="list-style-type: none"> <li>• New, constructive data regarding Bornean wild cat ecology (including greater knowledge of habitat requirements and range), response to habitat alteration, &amp; 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</li> <li>• ITBC students trained in mammal field techniques – the next generation of decision makers and the people most likely to take roles in the SWD.</li> <li>• Feedback from training course regarding changed perceptions and attitudes</li> <li>• Bornean wild cat education materials produced &amp; utilised in environmental education programmes.</li> <li>Greater awareness of the threats</li> </ul>	<ul style="list-style-type: none"> <li>• Partner institution reports. Final &amp; annual project reports and feedback from dissemination workshop.</li> </ul>	<ul style="list-style-type: none"> <li>• Sufficient numbers of wild cats can be filmed/ photographed, trapped, collared &amp; successfully tracked</li> <li>• Recommendations read by relevant stakeholders &amp; changes implemented where necessary.</li> <li>Evidence is collated of hunting pressures.</li> </ul>
<b>Outputs</b>			
<ul style="list-style-type: none"> <li>• A report providing recommendations for a Bornean Wild cat Action Plan for Sabah and a project dissemination workshop</li> </ul>	<ul style="list-style-type: none"> <li>• Report peer reviewed &amp; publication date established. Report distributed to target institutions/bodies within 6 months of project completion.</li> </ul>	<ul style="list-style-type: none"> <li>• Reviews &amp; 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Research project is completed and data analysed.</li> <li>• Stakeholders attend project dissemination workshop.</li> </ul>
<ul style="list-style-type: none"> <li>• Training in mammal field research techniques, resulting in increased human capacity in Malaysia for mammal field studies.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum of 60 Malaysian students &amp; scientists, including 2 trainers, successfully trained during field course. 1 individual to receive 3 years on the job training and 2 month</li> </ul>	<ul style="list-style-type: none"> <li>• Field course manual, participants attendance records &amp; feedback assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Sufficient numbers of students show an interest in attending the course, &amp; continue in the field of ecology</li> </ul>

	WildCRU scholarship.		
<ul style="list-style-type: none"> <li>Wild cat specific education programme, aimed at schools, communities &amp; tourists, for use in DVFC environmental education centre, &amp; 2 major tourist facilities in the region: Borneo Rainforest Lodge &amp; Tabin Wildlife Resort.</li> </ul>	<ul style="list-style-type: none"> <li>Bornean wild cat education materials produced using clouded leopard as a flagship species &amp; displayed at target institutions, &amp; utilised in environmental education programmes.</li> </ul>	<ul style="list-style-type: none"> <li>Posters, handouts, guides, &amp; new wild cat photos. Partner institution reports.</li> </ul>	<ul style="list-style-type: none"> <li>School groups continue to visit DVFC &amp; utilise the educational materials. Tourists continue to visit Borneo Rainforest Lodge &amp; Tabin Wildlife Resort.</li> </ul>
<ul style="list-style-type: none"> <li>Report on the threats from hunting &amp; trade on wild cat populations in &amp; surrounding Tabin Wildlife Reserve.</li> </ul>	<ul style="list-style-type: none"> <li>Number of participants in communities surrounding Tabin Wildlife Reserve successfully interviewed.</li> </ul>	<ul style="list-style-type: none"> <li>Hunting reports produced at end of year 1 &amp; 2.</li> </ul>	<ul style="list-style-type: none"> <li>Communities co-operate with us &amp; our local collaborators during the questionnaire survey.</li> </ul>
Activities	Activity milestones (summary of project implementation timetable)		Assumptions
<ul style="list-style-type: none"> <li>Field research Programme</li> </ul>	<ul style="list-style-type: none"> <li>Yr 1: camera survey of DV &amp; TWR, phase 1 of live-trapping programme at DV, first cats collared. Yr 2. Continuation of camera survey and trapping &amp; tracking programme. Yr 3. Continuation of camera survey &amp; trapping &amp; tracking programme. Long-term mammal monitoring programme established.</li> </ul>		<ul style="list-style-type: none"> <li>Sufficient numbers of wild cats can be filmed/ photographed, trapped, collared &amp; successfully tracked.</li> </ul>
<ul style="list-style-type: none"> <li>Project dissemination workshop</li> </ul>	<ul style="list-style-type: none"> <li>Relevant stakeholders and project partners invited to attend workshop in Kota Kinabalu, Sabah during May 2009</li> </ul>		<ul style="list-style-type: none"> <li>Key stakeholders attend workshop.</li> </ul>
<ul style="list-style-type: none"> <li>Field courses in mammal field research techniques.</li> </ul>	<ul style="list-style-type: none"> <li>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 &amp; 2 UK ecologists.</li> </ul>		<ul style="list-style-type: none"> <li>Sufficient numbers of students/scientists attend the course.</li> </ul>
<ul style="list-style-type: none"> <li>Development / production of wild cat education materials &amp; implementation of environmental education programme.</li> </ul>	<ul style="list-style-type: none"> <li>Initial ID/information posters, handouts &amp; guides produced &amp; displayed/presented by Yr 1. Additional environmental education materials produced in Yrs 2 &amp; 3 as further wild cat data &amp; photos are obtained.</li> </ul>		<ul style="list-style-type: none"> <li>Sufficient data &amp; wild cat photos are obtained for incorporation in environmental education materials</li> </ul>
<ul style="list-style-type: none"> <li>Hunting survey in communities surrounding the TWR.</li> </ul>	<ul style="list-style-type: none"> <li>Yr 1: 4 week survey completed, &amp; data analysed. Yr 2: Follow-up survey completed, data analysed &amp; final report produced and distributed.</li> </ul>		<ul style="list-style-type: none"> <li>Communities co-operate with us &amp; our local collaborators.</li> </ul>